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SECRETARY OF THE AIR FORCE**

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Health Services

**MANAGING CLINICAL ENGINEERING
PROGRAMS**

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The clinical engineering program combines medical equipment management, maintenance, electrical safety, and Facility Management (FM) to ensure efficient, effective, and coordinated technical services to support the United States Air Force Medical Service (AFMS).

This publication implements the Clinical Engineering Support Policy in Air Force Policy Directive (AFPD) 41-2, Medical Support. This instruction applies to all Air Force (AF), Air Force Reserve Command (AFRC) and Air National Guard (ANG) medical activities. It prescribes requirements for management of Clinical Engineering Programs in Air Force Military Treatment Facilities (MTFs). The Clinical Engineering Program includes Medical Equipment Maintenance, Electrical Safety, and FM. Note: For Medical Wings, references to Medical Logistics Flight Commander (MLFC) and Medical Support Squadron Commander shall be interchanged with Medical Logistics Squadron Commander and Medical Support Group Commander when applicable. This AFI may be supplemented at any level, but all supplements must be routed to the Air Force Medical Operations Agency, Medical Logistics Division (AFMOA/SGAL), 693 Neiman Street, 1st Floor, Fort Detrick, MD 21702 (email: AFMOA.SGALO.policy@us.af.mil) for coordination prior to certification and approval. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using AF Form 847, *Recommendation for Change of Publication*; route AF Form 847s from the field through Major Command (MAJCOM) Publications/Forms Managers. The authorities to waive wing/unit level requirements in this publication are identified with a Tier ("T-0, T-1, T-2, T-3") number following the compliance statement. See

AFI 33-360, *Publications and Forms Management*, Table 1.1 for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the Publication OPR for non-tiered compliance items. Ensure all records created as a result of processes prescribed in this publication are maintained IAW AFMAN 33-363, *Management of Records*, and disposed of IAW Air Force Records Disposition Schedule (AFRDS) located in the Air Force Records Information Management System (AFRIMS) accessible through the AF Portal. The use of the name or mark of any specific product, commodity, or service in this publication does not imply endorsement by the Air Force.

SUMMARY OF CHANGES

This publication has been substantially revised and must be reviewed in its entirety. It has been revised to provide a clearer understanding of responsibilities. Chapters 2 and 3 have been rewritten to clarify maintenance responsibilities of local medical maintenance shops and regional Medical Equipment Repair Centers (MERCs). Chapter 4, Electrical Safety, is new to this AFI and supersedes all information that was contained in AFI 41-203, *Electrical Safety*. Chapter 5 now contains all Facility Management (FM) information moved from the previous Chapter 4.

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Chapter 1

ROLES AND RESPONSIBILITIES

1.1. The Air Force Medical Operations Agency.

1.1.1. Medical Logistics Division, Clinical Engineering Branch (AFMOA/SGALE), in conjunction with Air Force Medical Support Agency, Health Facilities Division (AFMSA/SG8F) will:

1.1.2. Formulate policy and guidance for Air Force clinical engineering programs.

1.1.3. Manage the Medical/Dental Investment and Capital Equipment Programs.

1.2. The Military Treatment Facility (MTF).

1.2.1. Commander will establish a clinical engineering program to ensure a safe environment for patients, staff, and visitors in accordance with (IAW) Air Force directives and appropriate civilian accrediting and regulatory agencies. (T-0, TJC and AAAHC)

Chapter 2

ESTABLISHING AN ORGANIZATIONAL MEDICAL EQUIPMENT MAINTENANCE PROGRAM

2.1. Program Elements.

2.1.1. The medical equipment maintenance program ensures medical equipment is serviceable, safe, and properly configured to meet peacetime and wartime missions of the medical service.

2.2. Responsibilities.

2.2.1. These responsibilities are furnished as minimum requirements and are not intended to limit management functions to the areas listed.

2.2.1.1. The clinical engineer senior biomedical equipment technician (BMET) will:

2.2.1.2. Develop an Equipment Management Plan consistent with civilian accreditation applicable standards of either The Joint Commission (TJC) and Accreditation Association for Ambulatory Health Care, Inc., (AAAHC). (T-0)

2.2.1.3. Ensure the Maintenance Management Report (MMR) is updated monthly and provided to the MLFC for signature. (T-3)

2.2.1.4. Conduct an annual self-inspection. (T-3)

2.2.2. Biomedical Equipment Technicians (BMETs) will:

2.2.2.1. Perform medical equipment maintenance and enter complete historical maintenance data into Defense Medical Logistics Standard Support (DMLSS) including all entry of all organic and contract maintenance performed. (T-0, 42 Code of Federal Regulations (CFR), Part 482)

2.2.2.2. Ensure medical equipment guarantees and service warranties are processed and registered with the manufacturer and acquire warranty service when appropriate. (T-1)

2.2.3. Equipment Operators will:

2.2.3.1. Use only authorized equipment inspected by the medical equipment maintenance activity. (T-0, National Fire Protection Association, (NFPA) 99, *Health Care Facilities Code*)

2.2.3.2. Perform operator maintenance specified in the operator's manual. (T-1)

2.2.3.3. Immediately report equipment malfunctions or damage to the medical equipment maintenance activity. (T-0, NFPA 99)

2.2.3.4. Ensure medical maintenance inspection label affixed to equipment is up-to-date before use on a patient. (T-2)

2.2.3.5. Immediately impound equipment and consumables involved in an incident and notify the medical equipment maintenance activity. (T-0, NFPA 99)

2.2.3.6. Clean equipment in compliance with infection control policies prior to delivery to medical equipment maintenance activity. (T-3)

2.3. Supporting Air Force Reserve Command (AFRC) and Air National Guard (ANG).

2.3.1. The AFRC and ANG medical activities and aeromedical evacuation squadrons that are authorized and assigned AFSC 4A2X1 personnel, must perform organizational maintenance support, 42 Code of Federal Regulations (CFR), *Public Health*. (T-0)

2.3.2. Maintenance support will be provided as follows to AFRC and non-mobilized ANG medical activities and aeromedical evacuation squadrons not authorized or assigned AFSC 4A2X1 personnel:

2.3.2.1. Activities should request organizational maintenance support for medical equipment from the closest active component Air Force medical unit. This type of support requires a written support agreement IAW AFI 25-201, *Support Agreements Procedures*.

2.3.2.2. The regional Medical Equipment Repair Center (MERC) provides organization maintenance support as defined in Chapter 3 of this instruction for activities outside the immediate area of an active component Air Force medical activity, or if manpower or equipment limitations prevent the nearest active component facility from providing support. The MERC performs annual Preventive Maintenance (PM), calibration, repair, safety, and administrative support. (T-1)

2.3.2.3. MERC personnel train AFRC and ANG personnel on equipment maintenance so it can be safely operated during interim periods. In addition, the MERC provides technical assistance on new equipment systems. (T-1)

2.4. Supporting U. S. Army Veterinary Services.

2.4.1. Units located on Air Force installations are supported by the local medical equipment maintenance activity IAW the Memorandum of Understanding (MOU) established between the Army and Air Force. A copy of the MOU can be found on the Air Force Medical Logistics (AFML) website. (T-1)

2.5. Supporting Aeromedical Evacuation and Patient Movement Items Units.

2.5.1. The host medical equipment maintenance activity performs organizational maintenance on equipment at active component Aeromedical Evacuation (AE) and Patient Movement Items (PMI) units on their base. (T-1)

2.5.2. The medical equipment maintenance activity will ensure AF Form 4033, *PMI/AE Certification Label*, is affixed to each AE or PMI medical equipment item certified for flight. A listing of model specific equipment items certified for flight can be found on the AFML website. (T-1)

2.5.3. The MERC supporting the host medical equipment maintenance activity provides intermediate maintenance for AE and PMI equipment. (T-1)

2.5.4. During maintenance of PMI equipment, the servicing BMET will coordinate with the closest PMI center to verify equipment owner, ensure the equipment location is current in the tracking system, and provide the most recent calibration date for update in the tracking system. (T-1)

2.5.5. The closest medical equipment maintenance activity performs corrective maintenance required for equipment being used on a patient mission. The medical equipment

maintenance activity documents the work performed on a manual work order and forwards it to the owning activity. (T-1)

2.6. Supporting Medical Equipment Not Owned by the MTF.

2.6.1. Medical Equipment Management Office (MEMO) coordinates with the BMET to identify and appropriately manage all loaned or privately owned medical equipment used in Air Force MTFs. (T-2)

2.6.1.1. MEMO will maintain a list of all loaned authorizations IAW AFI 41-209, *Medical Logistics Support*. (T-3)

2.6.1.2. BMETs conduct initial operational/safety inspections and calibration verification of equipment to ensure compliance with appropriate safety, performance standards, and manufacturer's literature before using for patient care. (T-0, NFPA 99)

2.6.1.3. The equipment owner is responsible for equipment maintenance and repair.

2.6.2. When loaned, consigned, or privately owned medical equipment is to be used on a continuous basis (more than 30 days), MEMO will enter it in DMLSS with acquisition cost of one cent. (T-1)

2.7. Supporting War Reserve Materiel (WRM).

2.7.1. BMETs will:

2.7.1.1. Maintain WRM equipment in a peacetime environment. This maintenance is ultimately the responsibility of locally assigned BMET personnel. If contract maintenance is used to augment local BMET capabilities, the BMETs will validate maintenance is adequately performed and monitor performance. (T-0, 42 CFR, Part 482)

2.7.1.2. Follow the guidance in AFI 10-403, *Deployment Planning and Execution*, and AFMAN 24-204, *Preparing Hazardous Materials for Military Air Shipments*, to prepare for mobilizing and transporting WRM materiel. (T-1)

2.7.1.3. Report unserviceable WRM equipment, that may limit the operational capability of a project, to the WRM Non Commissioned Officer In Charge (NCOIC), for notation on the monthly WRM materiel availability percentage report submitted to Medical Readiness. (T-1)

2.7.1.4. Inspect equipment stored in pre-positioned assemblages at the operating location as well as mobility assemblages maintained in a deployable mode. The BMET inspects equipment immediately upon receipt and thereafter at the frequency dictated by medical device code. (T-0, 42 CFR, Part 482)

2.7.1.5. Ensure ancillary support equipment such as power distribution systems, environmental control systems, and other applicable real property equipment is operational and in good condition. (See AFI 32-1062, *Electrical Systems, Power Plants, and Generators*, and AFI 25-101, *War Reserve Materiel (WRM) Program Guidance and Procedures*) (T-1)

2.7.1.6. Create and maintain an individual Equipment Data File (EDF) for each medical WRM equipment item. (T-0, 42 CFR Part 482)

2.7.1.7. Maintain Equipment Data Files for mobility assemblages in a deployable mode. If DMLSS is not available, use AF Form 1763, *Medical Maintenance Work Order*, to record each maintenance action conducted during activation. (T-2)

2.7.1.8. Transfer all maintenance information recorded on AF Form 1763 into DMLSS or onto AF Form 509, *Medical Equipment Maintenance Record*, if DMLSS is not available, when returning the materiel to storage. (T-3)

2.7.1.9. Store/pack technical literature for equipment in WRM assemblages in either electronic or hardcopy format (T-2)

2.7.1.10. Charge repair parts and repairs to WRM equipment, not being used in exercises, to the WRM stock fund IAW AFI 41-209. (T-2)

2.8. Pre-Purchase Evaluation and Selection of Medical Equipment.

2.8.1. BMETs evaluate and document equipment requirements IAW AFI 41-209.

2.8.2. MEMO will ensure the purchase request includes complete operating and service manuals in either hardcopy or electronic format. (T-0, NFPA 99)

2.8.3. Manufacturer training purchased in conjunction with the equipment procurement must be completed within 12 months of equipment acceptance. If training is not completed within the 12 month period, funds will be de-obligated. (T-2)

2.9. Acceptance Inspection.

2.9.1. BMETs inspect all newly procured, leased, loaned, or consigned medical equipment before issuing the item to a using activity. Privately owned medical equipment should follow the same acceptance inspection guidelines if used within the MTF.

2.9.1.1. BMETS will:

2.9.1.2. Ensure item was delivered without damage, operates according to the manufacturer's specifications, and complies with applicable safety and performance standards. (T-0, NFPA 99)

2.9.1.3. Document identification data, initial leakage current, and measurements of performance and calibration parameters on the work order, an appropriate calibration form, or include in the Historical Maintenance Report (HMR), based on local policy and procedures. (T-0, NFPA 99)

2.9.1.4. Review the relevant contracts and literature for warranty provisions. (T-0, NFPA 99)

2.9.1.5. Complete the warranty registration data, if applicable, and forward to the manufacturer. **Note:** Device tracking requirements of the Food and Drug Administration Modernization Act (FDAMA) may require devices to be registered as part of the warranty process. (T-0, NFPA 99)

2.9.1.6. Affix an Equipment Control Number (ECN) tag to each item for identification and accountability. Always ensure serial numbers are recorded in DMLSS as a cross-reference to the ECN (especially important if item is too small to affix ECN tag). (T-0, NFPA 99)

2.9.1.7. Mark the equipment IAW AFI 41-209.

2.9.1.8. Verify accurate quality assurance data is loaded into DMLSS. (T-0, NFPA 99)

2.9.1.9. Ensure DMLSS reflects the proper medical device code for the item. (T-0, NFPA 99)

2.9.1.10. Establish an EDF in ECN sequence as prescribed in paragraph 2.29 of this instruction. (T-0, NFPA 99)

2.9.1.11. Place a copy of the contract or purchase order, a copy of the warranty registration, and the initial inspection work order in the EDF. (T-0, NFPA 99)

2.9.1.12. File all technical literature. (T-0, NFPA 99)

2.9.1.13. Determine and acquire repair parts as appropriate.

2.9.2. Maintenance Support. The local medical equipment maintenance activity determines if it can maintain the equipment in-house or if Precision Measurement Equipment Laboratory (PMEL), depot, or contract maintenance is required.

2.9.2.1. If the maintenance activity does not have the necessary skills or resources in-house, the activity determines what specialized training, space, and test equipment is required.

2.9.2.2. Tuition cost for maintenance training and required test equipment should be included in the acquisition of the equipment when appropriate.

2.9.2.3. Analyze all factors when determining whether or not contract maintenance is required. In some cases, contract maintenance services are more readily available, or more economical, than the maintenance activity can offer.

2.9.2.4. All maintenance contracts must be reviewed by the NCOIC of the maintenance activity IAW contracting timelines prior to the expiration or renewal date of the contract. This review must validate the need to continue the existing service or modify the level of service needed to augment existing maintenance capabilities of assigned BMETs.

2.10. Scheduled Maintenance.

2.10.1. AFMOA/SGAL establishes minimum scheduled maintenance requirements based on the manufacturer's recommended frequencies, area of use (MTF vs. WRM), and risk assessment.

2.10.1.1. BMETs perform scheduled maintenance at these minimum frequencies but are authorized to increase scheduled frequencies when local circumstances/environmental factors warrant. (T-1)

2.10.1.2. Medical equipment maintenance activities may not reduce frequencies without the written approval of AFMOA/SGAL. Coordinate any approved reduction through your local committee responsible for environment of care. (T-0, 42 CFR, Part 482)

2.10.2. Equipment designated and permanently marked "for training use only" does not require scheduled maintenance.

2.10.3. Work order procedures. When malfunctions are detected during scheduled maintenance, corrective measures will be taken and parts replaced, if necessary. Corrective

actions must be documented on the scheduled work order or an unscheduled work order can be opened to capture the corrective actions. (T-2)

2.10.4. Repair parts. Repair parts used will be documented on the scheduled maintenance work order. Generation of an unscheduled work order for this action is not necessary. (T-3)

2.10.5. When an equipment item fails to meet the appropriate safety standards, affix an AF Form 979, *Danger Tag*, to the equipment until the problem is corrected. Adhere to local lockout/tag-out procedures as applicable. (T-0, 29 CFR)

2.10.5.1. The BMET notifies the department chief and safety officer about the danger tag. (See AFI 91-203, *Air Force Consolidated Occupational Safety Instruction*, for the proper use of mishap prevention tags.) (T-1)

2.10.5.2. The BMET removes the item from use and makes every effort to replace the defective equipment with a similar item that meets the safety standards. (T-0, 29 CFR)

2.10.5.3. If no alternatives exist, and the medical staff determines the equipment must remain in service for the patient, the BMET will document the decision and immediately remove the equipment from service when replaced or no longer needed. (T-0, 29 CFR)

2.10.6. During scheduled maintenance, BMETs will evaluate the condition of equipment and verify that the condition code accurately reflects the current condition of the equipment. This code helps determine whether or not the item will appear on the equipment replacement report. The condition code also affects the equipment item's maximum repair allowance (MRA) by adjusting the percent of life remaining. (T-2)

2.10.7. BMETs document all calibration data on the appropriate form or worksheet and maintain in the hardcopy EDF, electronic EDF, or DMLSS as appropriate. (T-1)

2.10.8. Individuals performing scheduled maintenance procedures must affix a completed DD Form 2163, *Medical Equipment Verification Certification*, AF Form 4368, *Scheduled Maintenance and Certification Sticker*, or locally developed form approved by AFMOA/SGALE to the item. (T-1)

2.10.9. Equipment that has potential to be used in a Tri-Service environment (e.g., AE, PMI, WRM) must have DD Form 2163 affixed after completing scheduled maintenance. (T-1)

2.10.10. BMETs ensure Test, Measurement, and Diagnostic Equipment (TMDE) used for calibration/certification of medical equipment is calibrated IAW manufacturers' specifications, and Technical Order (TO) 33K-1-100-1, *Technical Manual Calibration Procedure for Maintenance Data Collection Codes and Calibration Measurement Summaries*. Local PMEL activities calibrate most TMDE used by BMETs. TMDE that PMEL cannot calibrate or certify, must be certified by the manufacturer or other entity using standards traceable to the National Institute of Standards and Technology (NIST). Items returned by PMEL with limited calibration (indicated by a yellow TMDE Certification Label) require user acknowledgement by initialing the label in the appropriate block IAW TO 00-20-14, *Air Force Metrology and Calibration Program*. For medical TMDE, the Original Equipment Manufacturer (OEM) interval will take precedence over the AF interval (TO 33K 1-100-1) when the OEM interval is shorter. As applicable, BMETs will notify the PMEL scheduler of the required OEM interval. (T-0, FDA, *Medical Device Quality Systems Manual*, Chapter 7)

2.11. Unscheduled Maintenance and Repair.

- 2.11.1. If DMLSS is not working/available, the BMET must document a manual work order request (AF Form 1763) and enter it on an unscheduled work order register. (T-1)
- 2.11.2. If the repair involves ordering repair parts, the BMET will list all required parts on the work order and enter this information into DMLSS. (T-2)
- 2.11.3. Maintenance activities with manual systems will document the part needed on the manual work order, order it through normal supply channels, and establish a method to monitor the status of work orders awaiting parts. (T-2)
- 2.11.4. If unscheduled maintenance affected any electrical components of the equipment item, complete an electrical safety check IAW Chapter 4 of this AFI. (T-0, NFPA 99)
- 2.11.5. The individual accepting the repaired item from the medical equipment maintenance activity will sign the work order acknowledging receipt. (T-3)
- 2.11.6. BMETs who perform unscheduled maintenance on fixed/installed equipment follow local lockout/tag-out policies and procedures as applicable. (T-0, 29 CFR)

2.12. Accounting for Repairable Property.

- 2.12.1. Each item will be tagged with a copy of the work order, AFTO Form 350, *Repairable Item Processing Tag*, or locally developed/procured form. (T-2)
- 2.12.2. BMETs will maintain a current log of items returned to contractor for repair. (T-2)

2.13. Reporting and Review of Equipment Maintenance.

- 2.13.1. BMETs will immediately report failure of critical medical equipment to the MLFC. (T-3)
- 2.13.2. At the end of each month, maintenance supervisors will review equipment awaiting repair or repair parts for more than 30 days to determine the cause of the delay and ensure corrective action is taken. (T-3)
- 2.13.3. The Maintenance Management Report (MMR) is updated monthly and provided to the MLFC for review of outstanding work orders and signature. (T-3)
- 2.13.4. Maintain the annotated reports for two years IAW AFRDS Table 41-04, Rule 31.00. (T-3)

2.14. Equipment Turn-Ins.

- 2.14.1. BMETs determine serviceability of turned in equipment by inspection and review of maintenance history. (T-2)
- 2.14.2. BMETs tag the item with DD Form 1574, *Serviceable Tag-Materiel (Yellow)*, DD Form 1577-1, *Unserviceable (Condemned) Tag- Materiel (Red)*, or DD Form 1577-2, *Unserviceable (Repairable) Tag-Materiel (Green)*. Federal condition codes can be found at: www.dispositionservices.dla.mil/sales/federalconditioncodes.pdf. (T-2)
- 2.14.3. Include excess service literature, repair parts, test equipment, and the EDF with the equipment turned in. (T-2)

2.14.4. Maintenance activities may cannibalize or disassemble excess or unserviceable medical equipment for serviceable parts or components and gain into bench stock as required. (T-2)

2.14.5. BMETs will report unserviceable PMI equipment to AMC/SGXM. (T-2)

2.14.6. Prior to sending equipment to Defense Reutilization and Marketing Office (DRMO), all Protected Health Information (PHI) must be removed IAW paragraph 2.22.5 of this instruction. (T-2)

2.15. Managing the Equipment Environment and Utilities.

2.15.1. BMETs ensure testing and calibration of ground detection alarm systems and line isolation monitors IAW NFPA 99, *Health Care Facilities*, Chapter 4 of this AFI, and *Health Devices, Inspection and Preventive Maintenance System*, of Emergency Care Research Institute (ECRI). (T-0, NFPA 99)

2.15.2. The BMET immediately reports any discrepancies to the officer in charge of surgery. (T-0, NFPA 99)

2.15.3. Report defects in electrical power systems through Facility Management (FM) to the Base Civil Engineer (BCE), who is responsible for the repair of ground fault detection systems and line isolation monitors. (T-0, NFPA 99)

2.16. Maintaining X-Ray Systems.

2.16.1. Local BMET responsibilities:

2.16.1.1. Perform all required maintenance, system calibrations, and Post Calibration Radiation Inspections (PCRI) on x-ray systems according to OEM service manual. If local resources are insufficient or not available, contact regional MERC for necessary support as applicable. (T-0, 42 CFR and 21 CFR, Part 1020)

2.16.1.2. Maintain records and images supporting all system maintenance in the EDF. (T-0, 42 CFR and 21 CFR, Part 1020)

2.16.1.3. Report equipment malfunctions, which affect the ability to calibrate, to the regional MERC prior to any scheduled visit. (T-0, 42 CFR and 21 CFR, Part 1020)

2.16.1.4. Shadow MERC technicians during the performance of requested services. Shadowing the MERC technician(s) provides valuable training to local BMETs for future performance of maintenance actions. (T-0, 42 CFR and 21 CFR, Part 1020)

2.16.2. MERC Responsibilities:

2.16.2.1. The MERC oversees the calibration program of diagnostic x-ray systems for bases within their region and performs PCRI on all x-ray systems not performed locally. (T-2)

2.16.2.2. The MERC will annually assess local BMET compliance with current maintenance and calibration/certification standards. Level of assessment will be determined by the regional MERC based on prior site visits, documentation review, needs assessment, and local BMET training levels, as required. (T-2)

2.16.3. ECN/Serial Number Control of X-Ray Systems. Provisions of 21 CFR, Part 1020, require major components of x-ray systems be controlled by line item. To comply with this regulation, Air Force activities must establish serial number control of the following major components: tube housing assemblies, x-ray controls, x-ray high voltage generators, transformers, collimators, tables, cradles, film changers, chest stands, fluoroscopic imaging assemblies, spot film devices, image intensifiers, cephalometric devices, image receptor support devices for mammographic x-ray, and other components such as video monitors, video camera recorders, film cameras, cine cameras, and digital systems. Control will be established using procedures in AFMAN 41-216, *Defense Medical Logistics Standard Support (DMLSS) Users Manual*. (T-0, 21 CFR, Part 1020)

2.17. Certification of X-Ray Systems.

2.17.1. BMETs must ensure all components of diagnostic medical x-ray systems (which includes dental x-ray systems) are certified by the Food and Drug Administration (FDA), Department of Health and Human Services, and Center for Devices and Radiological Health (CDRH), IAW 21 CFR, Parts 1000 and 1020. (T-0)

2.17.2. Facilities will not purchase uncertified x-ray systems. BMETs install, certify, maintain, and repair medical x-ray systems according to 21 CFR, *Food and Drugs*, Part 1020, *Radiological Health*, and the manufacturer's instructions. Personnel who install, adjust, and test diagnostic x-ray systems or their major components, are classified as assemblers under the provisions of 21 CFR, Part 1020. Within the Air Force, personnel holding AFSC 4A251/71/91, or civilian equivalents may act as assemblers. (T-0, 21 CFR, Parts 1000 and 1020)

2.17.3. Individuals who install x-ray equipment under contract with the government or under control of a prime contractor are considered assemblers and are subject to the provisions of 21 CFR, Part 1020. (T-0)

2.17.4. Air Force assemblers installing equipment within the region of applicability (50 United States and its territories) must send the original (white copy) within 15 days to Center for Devices and Radiological Health Document Mail Center – WO66-G609, 10903 New Hampshire Avenue, Silver Spring, MD 20993-0002. The state agency copy (yellow copy) of FDA Form 2579 must be forwarded to AFMOA/SGAL, within 30 days of the installation. Keep the pink copy in the EDF for the x-ray system. **Note:** The reporting requirement in this paragraph is exempt from licensing IAW AFI 33-324, *The Air Force Information Collections and Reports Management Program*. (T-0, 21 CFR, Parts 1000 and 1020)

2.17.5. Contractor assemblers installing equipment must provide the original FDA Form 2579 directly to the CDRH within 15 days of installation, and give the purchaser copy (pink copy) to the MTF to file in the EDF in the medical equipment maintenance activity. (T-0, 21 CFR, Parts 1000 and 1020)

2.17.5.1. The medical equipment maintenance activity forwards a duplicate copy (carbon or reproduction) of FDA Form 2579 to AFMOA/SGAL within 30 days of installation. (T-0, 21 CFR, Parts 1000 and 1020)

2.17.5.2. Medical materiel activities located outside the region of applicability must ensure the local BMET or contractor prepares FDA Form 2579 to be forwarded to

AFMOA/SGALE when they install a certified component. (T-0, 21 CFR, Parts 1000 and 1020)

2.17.5.3. When a contractor does not complete the FDA Form 2579, the senior member of the military acceptance team completes and signs the form. Annotate on the form the name of the company responsible for the installation. (T-0, 21 CFR, Parts 1000 and 1020)

2.17.5.4. The medical equipment maintenance activity retains a copy of FDA Form 2579 until all components listed on it have been relocated, transferred to another facility, or removed from service. (T-0, 21 CFR, Parts 1000 and 1020)

2.17.5.5. Assemblers who reinstall certified component systems when the systems are relocated or transferred, or who replace or add certified components to an existing system, must provide AFMOA/SGALE with FDA Forms 2579 as prescribed previously in this paragraph. **Note:** X-ray tube heads are an exception to this requirement. (T-0, 21 CFR, Parts 1000 and 1020)

2.18. Radiation Protection Surveys.

2.18.1. A properly qualified health physicist or bioenvironmental engineer, IAW AFI 48-148, *Ionizing Radiation Protection*, must conduct a complete radiation protection survey when new x-ray facilities open for routine use. (T-0, 21 CFR, Part 1000)

2.18.2. Radiation protection surveys will be included as part of the facility construction/modification contract or request through bioenvironmental engineering (BEE). (T-0, 21 CFR, Part 1000)

2.18.3. When replacing x-ray equipment with similar capabilities and workloads, the health physicist or BEE evaluates shielding effectiveness, and can approve interim use of the facility until the survey is completed. (T-0, 21 CFR, Part 1000)

2.18.4. In all cases, complete the radiation protection survey within 90 days of the acceptance date. (T-0, 21 CFR, Part 1000)

2.18.5. Any discrepancies in the radiation protection survey, that may be attributable to the manufacturer, are referred immediately to the manufacturer through the contracting agency. (T-0, 21 CFR, Part 1000)

2.18.6. For radiation protection surveys of devices that produce ionizing radiation, contact the appropriate regional medical physics support activity per AFI 48-148. (T-0, 21 CFR, Part 1000)

2.18.7. Notify the base radiation safety officer when replacing any major component of an x-ray system. The radiation safety officer will make the determination whether a radiation protection survey is needed. (T-0, 21 CFR, Part 1000)

2.18.8. File copies of the radiation protection survey in the maintenance activity, the workplace case folder maintained by BEE, and the radiology department. The preparer furnishes additional copies of such reports to the regional MERC and AFMOA/SGALE. (T-0, 21 CFR, Part 1000)

2.18.9. Medical equipment maintenance activities document all steps taken to resolve the discrepancies noted on radiation protection surveys. (T-0, 21 CFR, Part 1000)

2.18.10. Medical equipment maintenance activities forward a letter to the regional MERC and AFMOA/SGALE, indicating they took corrective action within 45 days of receiving the report. The Medical Support Squadron commander signs the letter and includes information from radiology, the bioenvironmental engineer, and medical equipment maintenance, as appropriate. Keep a copy of all such letters on file with the report. (T-0, 21 CFR, Part 1000)

2.19. Modifying Medical Equipment.

2.19.1. A modification is a change in the design or assembly of an item to meet revised specifications, correct defects, or improve performance.

2.19.2. HQ USAF/SG may authorize modification of medical devices to correct design deficiencies, increase the equipment's effectiveness, increase the equipment's useful life, provide greater safety for patients and equipment operators, and reduce excessive maintenance. (T-0, 21 CFR, Parts 800 and 1000)

2.19.3. BMETs will not modify or alter medical devices in a way that changes the item's essential characteristics or compromises its compliance with manufacturer's specifications and Federal standards, unless authorized or directed by the HQ USAF/SG. (T-0, 21 CFR, Parts 800 and 1000)

2.19.4. AFMOA/SGALE issues hazard alert messages if equipment requires emergency modifications.

2.19.5. BMETs accomplish all directed modifications within prescribed time limits and in strict accordance with the modification instructions. (T-0, 21 CFR, Parts 800 and 1000)

2.19.6. At the discretion of the MTF commander, BMETs may make minor equipment modifications to meet local operating needs, and when such modifications do not change the essential characteristics, manufacturers' specifications, or Federal standard compliance of the item. BMETs may not perform modifications that may introduce a potential electrical or other safety hazard, even if the modification is considered minor. (T-0, 21 CFR, Parts 800 and 1000)

2.20. Documenting Medical Equipment Modifications.

2.20.1. BMETs must document all modifications in DMLSS. Document modifications at non-automated accounts by annotating on AF Form 509. BMETs keep all modification work orders in the EDF throughout the life of the item. (T-0, 21 CFR, Parts 800 and 1000)

2.20.2. BMETs document modifications authorized by the HQ USAF/SG by annotating the technicians' notes section of the HMR. Write the letters "MP" (Modification Performed), followed by a description of the modification. (T-0, 21 CFR, Parts 800 and 1000)

2.20.3. Software updates. Manufacturer directed/provided updates must be entered in DMLSS by creating an unscheduled work order. Equipment notes and work order notes must be updated with the current version and date of update. Previous equipment notes (regarding software or firmware revisions) can be removed. (T-0, 21 CFR, Parts 800 and 1000)

2.21. Food and Drug Administration Modernization Act (FDAMA) of 1997, 21 United States Code (USC) Sec. 201-217.

2.21.1. The FDAMA, formerly Safe Medical Device Act, requires manufacturers to track some implantable devices and some equipment that can be used outside the MTF. (See <http://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm071756.htm>.)

2.21.1.1. BMETs must provide data for equipment items (non-implantable) on the FDA traceable devices listed at the above website. Periodically review the above website for additions or deletions to the required traceable devices. Currently, these equipment items include breathing frequency monitors, continuous ventilators, ventricular bypass (assist) devices, and DC-defibrillators and paddles. Specific actions required include:

2.21.1.2. Notify manufacturer when a traceable device is brought on record. Registering medical devices with the manufacturer during the acceptance inspection meets this requirement. (T-0, FDAMA)

2.21.1.3. Notify the manufacturer when a traceable device is transferred to another facility or removed from service (e.g., salvage or traded-in). The losing facility will document the manufacturer was notified on the turn-in work order, and the gaining facility will document the manufacturer was notified on the acceptance work order. (T-0, FDAMA)

2.21.2. Provide the following data when notifying the manufacturer: a). MTF name and address, b). lot, batch, model, serial number or other device identifier, c). date the device was received, d). person from whom the device was received, e). the date the device was either explanted, taken out of use due to patient death (date of death), returned to the distributor, disposed of permanently, or permanently retired from use. (T-0, FDAMA)

2.22. Public Law 104-191, Health Insurance Portability and Accountability Act of 1996 (HIPAA). (T-0, 45 CFR Parts 160 and 164; DoD 6025.18-R)

2.22.1. As part of the HIPAA covered entity umbrella, the Clinical Engineering Program personnel and facilities are subject to the HIPAA privacy rules and national standards, including compliance with DoD 6025.18- R, *DoD Health Information Privacy Regulation*, DoD 8580.02- R, *DoD Health Information Security Regulation*, and AFI 41- 210, Chapter 6, *TRICARE Operations and Patient Administration Functions*, or as superseded by new or revised HIPAA privacy or security regulations or instructions, for the use and disclosure of protected health information. BMETs will review all new equipment requests to ensure HIPAA compliance. Procedures must be put into the initial inspection process to verify that all newly purchased equipment meets the MTF HIPAA Compliance Plan. (T-0, 45 CFR Parts 160 and 164) Contracts and leases must be amended to include specific business associate provisions, as required by the HIPAA privacy and security rules, to ensure that contractors and subcontractors, who come in contact with PHI as part of the products or services they provide, are fully aware of the MTF HIPAA Compliance Plan and the ramifications associated with failure to comply. (T-0, 45 CFR Parts 160 and 164)

2.22.2. Medical maintenance will maintain a list of all equipment that can store PHI. The list can be generated from DMLSS using search tags such as "PHI," "HIPAA," or "Protected Health Information" in the technician comments or via separate spreadsheet/database. (T-0, 45 CFR Parts 160 and 164)

2.22.3. Prior to sending medical equipment to service providers outside of the MTF (repair and return), BMETs must make every attempt to remove all PHI, without permanently damaging the device. If all PHI cannot be removed without causing permanent damage to the device, ensure that a signed business associate agreement is in place with the service provider IAW local MTF HIPAA policy, prior to the removal of equipment from the MTF or facility. (T-0, 45 CFR Parts 160 and 164)

2.22.4. Prior to sending equipment to DRMO or reporting as excess, all PHI must be removed. If PHI cannot be removed, storage media must be cleared and sanitized IAW AFMAN 33-282 , *Computer Security (COMPUSEC)*. If unit was fully functional prior to cleansing, attach DD Form 1577-2 annotating application software must be reinstalled and unit fully tested before further operation. (T-0, 45 CFR Parts 160 and 164)

2.22.5. Any reports created for distribution, that are not part of the monitoring, reporting, or investigation processes, will include only aggregate or de-identified data in order to conform to the minimum necessary standards. (T-0, 45 CFR Parts 160 and 164)

2.23. Medical Device Recalls and Hazard Alerts.

2.23.1. Medical device hazard and alert management is a critical component of maintaining a safe healthcare environment for patients, staff, and visitors to AF MTFs. To facilitate the management of alerts and recalls, Biomedical Maintenance Activities will use the following sources: Alerts Tracker® from ECRI Institute, Medical Materiel Quality Control (MMQC), AFMOA/SGAL generated quality assurance (QA) messages for AF-unique materiel, and direct sources such as the FDA, Prime Vendors/manufacturers, etc. (T-0, FDA)

2.23.2. Upon initial assignment to a unit, BMETs must update their ECRI Institute website profile. If BMETs do not have a profile, they must create a profile and register for the Alerts Tracker® program. Instructions on registration and use of the Alerts Tracker® application can be found on the AFML website in the document library labeled as Alerts Tracker® Quick Start Guide. (T-0, FDA)

2.23.3. The following are the classes of medical device recalls.

2.23.3.1. Class I: A situation with a reasonable probability that the use of, or exposure to, a product will cause serious, adverse health consequences or death. Suspend these items from use until the item has been repaired or modified to correct the described problem.

2.23.3.2. Class II: A situation in which the use of, or exposure to, a product may cause temporary or medically reversible adverse health consequences or where the probability of serious adverse health consequences is remote. Class II recalls are not generally serious enough to warrant suspension of the item until corrected.

2.23.3.3. Class III: A situation in which the use of, or exposure to, a product is not likely to cause adverse health consequences. Class III recalls are not generally considered serious enough to warrant suspension of the item until corrected.

2.23.4. BMETs will treat and document recalls that affect an item within the inventory as a quality assurance work order within DMLSS. After completing the recall procedures, BMETs document the equipment notes with the Alerts Tracker® accession number, and any other relevant information. (T-0, FDA)

2.23.5. When a manufacturer directly notifies an activity of any recall, the activity will take immediate action to implement the corrective procedures. BMETs will notify and provide a copy to AFMOA/SGALE within two (2) duty days by e-mail (bmnet@us.af.mil) any manufacturer's recall or material defect that has not been previously published through ECRI Alerts Tracker®. (T-0, FDA)

2.23.6. BMETs will inform the committee responsible for the environment of care (EOC) and the Medical Logistics DMLSS QA monitor of all recalls/alerts that affect equipment in the MTF inventory IAW AFI 41-209. BMETs will inform the medical logistics QA log monitor of completed actions/work orders (including DMLSS work order number) for existing recalls/alerts. DMLSS is the system of record for all QA actions. (T-0, FDA)

2.24. Medical Equipment Defect Reporting.

2.24.1. BMETs will report equipment defects as a Category I or II complaint, using both SF 368, *Product Quality Deficiency Report*, and FDA Form 3500A (See AFI 41-209 and AFI 44-119, *Medical Quality Operations*). Medical staff, patient safety, risk management, and Medical Logistics personnel will evaluate the credibility, validity, and potential harm of an item before submitting a materiel complaint. The MTF Healthcare Risk Manager will make the final determination if a materiel-related incident warrants processing a complaint. (T-0, FDAMA)

2.24.1.1. Download SF 368 from the DLA Troop Support Medical website, <https://www.medical.dla.mil/Portal/Custom/ProductQualityDeficiency.aspx>, and ensure that individually identifiable health information is not included IAW the HIPAA privacy rules.

2.24.1.2. Download the FDA Form 3500A from the FDA website <http://www.fda.gov/Safety/MedWatch/HowToReport/DownloadForms/ucm149238.htm>. This form requires individually identifiable health information and will be safeguarded IAW HIPAA privacy and security rules.

2.24.1.3. Category I complaints are reserved for materiel/equipment that has been determined by use or testing, to be harmful or defective to the extent that its use may cause death, injury, or serious illness, and must be reported within 48 hours of discovery.

2.24.1.4. Category II complaints are reserved for materiel/equipment that is suspected of being harmful, defective, deteriorated, or unsatisfactory because of malfunction or design, which are attributable to faulty materiel, workmanship and/or quality inspection, or performance, or are otherwise unsuitable for use.

2.24.1.5. Follow submission instructions for the SF 368 and FDA 3500A. In addition, send completed copies to AFMOA/SGALE. (T-0, FDAMA)

2.24.2. Incident investigations will be initiated IAW AFI 44-119.

2.24.2.1. An incident is an event in which equipment or a procedure has caused, or may have caused, injury to a patient, staff member, or visitor.

2.24.2.2. Personnel must properly preserve medical equipment items that may have been involved in a device-related incident. The equipment operator must ensure that no device settings are changed, and all accessories and consumables are attached or intact. The item will not be cleaned until after the investigation unless infection control procedures

require the item to be cleaned. The contaminated equipment should be labeled with an AF Form 980, *Caution Tag*.

2.24.2.3. The clinical engineering officer, senior BMET, or civilian equivalent will conduct a formal investigation in conjunction with the medical facility safety officer, risk manager, or others as appropriate. (T-0, FDAMA)

2.24.2.4. Use AF Form 765, *Hospital Incident Statement*, to document the incident to the MTF Healthcare Risk Manager. (T-0, FDAMA)

2.24.2.5. The investigation will be conducted by no less than two BMETs and include: impounding the equipment, noting the position of all knobs and dials on the equipment (and photographing if possible), noting missing components or parts, noting the overall condition of the equipment, interviewing involved personnel, identifying exact items of consumable supplies by lot number, date of manufacture, or other means, perhaps by getting the original packaging out of the trash, and reviewing maintenance history and test procedures. **Note:** For small facilities in which two BMETs are not available to conduct the investigation, one BMET assisted by another disinterested MTF staff member is acceptable. (T-0, FDAMA)

2.24.2.6. The investigating team will examine the three basic interfaces (operator-device, patient-device, and consumable-supply-device) to determine the cause of an incident. (See checklist on AFML website.) (T-0, FDAMA)

2.24.2.7. BMETs will work with the MTF Patient Safety Officer to develop local procedures that clearly delineate the responsibilities for conducting an incident investigation involving medical equipment. Outline the responsibilities for these investigations in the MTF Quality Assurance/Risk Management (QA/RM) plan IAW AFI 44-119. (T-0, FDAMA)

2.24.2.8. BMETs will assist the Patient Safety Officer to educate equipment custodians and operators of their responsibilities in equipment-related incident investigations. (T-0, FDAMA)

2.24.2.9. The regional MERC and AFMOA/SGALE can provide assistance for actual incident investigations.

2.25. Training Equipment Operators.

2.25.1. Operator error and improper use of equipment can lead to the injury or death of a patient or staff member.

2.25.2. BMETs will offer or coordinate training when a new equipment system is first issued and as requested. (T-1)

2.25.2.1. Maintain documentation of this training within the section receiving the in-service training as well as within the medical equipment maintenance activity. (T-1)

2.25.2.2. Operator training will include: proper operation, to include features unique to the particular manufacturer or model of equipment, safety precautions for operators and patients, user PM, cleanliness, and operational verification procedures, recognition and correction of common operational problems, recognition of defective equipment and potential hazards, and proper reporting procedures for maintenance requests. (T-1)

2.25.3. Frequent requests for repair service due to operator error or inadequate user maintenance may indicate the operator needs further training. BMETs who become aware of such problems will document the discrepancies, notify their supervisors, and offer or coordinate operator training to the section supervisor and equipment operators. Document training provided on a work order. (T-1)

2.26. Work Order Documentation and Control System.

2.26.1. BMETs will document all maintenance actions IAW AFMAN 41-216. (T-1)

2.27. Manual Work Order Procedures.

2.27.1. BMETs without DMLSS will use a manual work order, AF Form 1763, *Medical Maintenance Manual Work Order*, to record the work request and document the action taken. BMETs transcribe repair data and any changes in the condition code of the repaired item to the appropriate AF Form 509. (T-2)

2.27.2. BMETs will use a manual work order register to assign work order numbers and manage unscheduled workloads. This work order register will include work order number, item description, using activity, equipment control number, status, and date completed. (T-2)

2.27.3. BMETs will assign a twelve-digit work order number composed of the current eight-position date (YYYYMMDD), followed by a four-position serial number assigned from 0001 to 9999. (T-2)

2.28. Historical Maintenance Records (HMRs).

2.28.1. BMETs maintain HMRs for all medical equipment and maintenance significant supply items to include components with ECNs assigned. (T-0, 42 CFR, Part 482)

2.28.2. Historical Maintenance Records are maintained using AF Form 509 for activities without DMLSS. (T-0, 42 CFR, Part 482)

2.29. Equipment Data File (EDF).

2.29.1. BMETs will establish and maintain a separate history file on each maintenance significant equipment item or system including equipment rentals and equipment provided as part of a reagent or supply contract. (T-0, 42 CFR, Part 482)

2.29.1.1. System components do not require a separate EDF, but the system EDF must contain all component related information. (T-0, 42 CFR, Part 482)

2.29.1.2. The EDF is maintained in two parts:

2.29.1.2.1. DMLSS will maintain all work orders (scheduled and unscheduled). (T-0, 42 CFR, Part 482)

2.29.1.2.2. All other documentation will be kept in a separate physical folder or on a network drive with limited access. (T-0, 42 CFR, Part 482)

2.29.1.2.3. BMETs maintain these files in ECN sequence and retain them for the life of the equipment. (T-0, 42 CFR, Part 482)

2.29.2. Each EDF will contain applicable historical information which may include:

- 2.29.2.1. Pre-procurement surveys, room drawings, and power supply evaluations. (T-0, 42 CFR, Part 482)
- 2.29.2.2. Procurement documentation. (T-0, 42 CFR, Part 482)
- 2.29.2.3. Warranty registration. (T-0, 42 CFR, Part 482)
- 2.29.2.4. All maintenance worksheets/checklists not in DMLSS (acceptance, calibration, inspection, electrical safety). (T-0, 42 CFR, Part 482)
- 2.29.2.5. All work orders not captured in DMLSS (manual, depot, or contract). (T-0, 42 CFR, Part 482)
- 2.29.2.6. Recalls and hazard alerts (a copy of the work order must be maintained with results of applicable recalls and modifications). (T-0, 42 CFR, Part 482)
- 2.29.2.7. Modifications. (T-0, 42 CFR, Part 482)
- 2.29.2.8. Applicable medical device security information (Manufacturer's Disclosure Statement for medical device security (MDS2), AF/DoD network security documentation (DIACAP/PIT approvals), network diagrams, etc.). (T-0, 42 CFR, Part 482)
- 2.29.2.9. Radiation Survey Letter (letter from qualified Regional Medical Physicist that either evaluates the acceptability of existing shielding or calculates the required shielding for the proposed installation). (T-0, 42 CFR, Part 482)
- 2.29.2.10. Copy of FDA Form 2579, *Report of Assembly of a Diagnostic X-ray System*. (T-0, 42 CFR, Part 482)
- 2.29.2.11. Copies of purchase, lease, rental, one-time repair, and annual maintenance contract(s). (T-0, 42 CFR, Part 482)
- 2.29.2.12. Entrance skin exposure calculations provided by the Regional Medical Physicist IAW AFI 48-148.

2.30. Technical Reference File.

- 2.30.1. Each maintenance activity will maintain a technical reference file on each item of medical equipment including operating and service literature. (T-0, NFPA 99)
- 2.30.2. Items will be filed so that they are traceable to the Equipment Record. If using web-based manuals, include the web address in the Literature Location field. (T-0, NFPA 99)
- 2.30.3. The department that uses the equipment will maintain a copy of equipment operator's instructions and procedures. (T-0, NFPA 99)

2.31. Managing the Repair Parts Inventory.

- 2.31.1. BMETs will manage repair parts IAW with AFMAN 41-216. (T-1)
- 2.31.2. Parts maintained in the medical equipment maintenance section will be classified as repair parts inventory, except for parts ordered for immediate use and common bulk hardware items such as nuts, bolts, washers, pipe fittings, cotter pins, and wire. (T-1)
- 2.31.3. Medical Logistics will not carry repair parts in medical stock record account inventories. Parts will be issued to the medical equipment maintenance activity upon receipt.
- 2.31.4. BMETs will store repair parts in a secure area. (T-1)

2.31.5. Aeromedical Evacuation (AE) Certification. Original equipment manufacturer (OEM) parts must be used for AE certified equipment because of the testing criteria and limitations imposed by AE certification. (T-1)

2.31.6. BMETs will conduct annual inventory of repair parts by comparing actual inventory to Physical Inventory list IAW AFI 41-209. BMETs will submit a letter listing the results of the inventory along with the Physical Inventory printout to the MLFC for signature within 30 days of closure. (T-1)

2.31.7. BMETs report excess repair parts (greater than \$250) by preparing a turn-in document (DD Form 1348-6) and transferring the parts to medical materiel IAW AFI 41-209. (T-1)

2.32. Contract Maintenance.

2.32.1. Commercial contract maintenance is authorized to supplement organizational maintenance when adequate resources or skills are not available or are not cost effective. AFI 41-209 provides guidance on service contract management.

2.32.2. All Service Maintenance Agreements (SMA) utilized will be loaded into the DMLSS Service Contract Module. (See Clinical Engineering document library for *Service Maintenance Agreements* guidance document). (T-2)

2.32.3. All hardware items itemized on the SMA will be gained and entered into DMLSS. (T-2)

2.32.4. Verify the Contractor field is populated with the correct contract data on the Maintenance Data tab in the Equipment Detail screen of all SMA applicable items. (T-2)

2.32.5. Before contract award, BMETs will ensure contract verbiage requires contractors to sign in and out of the medical equipment maintenance activity before and after any onsite services are performed. (T-2)

2.32.6. BMETs must ensure annual contracts for scheduled, unscheduled, and one-time repair actions specify the equipment involved, whether parts are included, hours of service, response time, performance standards, frequency of servicing, documentation of work performed, reporting instructions, and distribution of service reports. (T-2)

2.32.7. Contracting Officer Representatives (CORs) will ensure maintenance contractors sign in and out of the medical equipment maintenance activity IAW contract. (T-2)

2.32.8. BMETs, in conjunction with FM, will establish local procedures to control contractors during other than normal duty hours. (T-2)

2.32.9. The BMET will keep a copy of the contract or annotate contract file location in DMLSS and/or the equipment data file (EDF). (T-2)

2.32.10. All contractor service reports will be filed in the EDF.

2.33. Precision Measurement Equipment Laboratories (PMEL).

2.33.1. TO 33K-1-100-1 outlines equipment user-owner responsibilities under the Air Force PMEL program.

2.33.1.1. Medical Equipment/Unique Medical TMDE is equipment unique to the medical industry for patient care, first aid response, or test equipment designed exclusively to simulate human physiology used for testing and calibration of patient care equipment. Some examples (not all inclusive): patient simulators, defibrillator analyzers, vital signs simulators, electrosurgical analyzers.

2.33.1.2. Medical Equipment/Unique Medical TMDE is managed by the AF Biomedical Engineering Maintenance Program IAW this AFI and AFI 41-209. Do not submit requests for calibration determination (AFTO Form 45) to Air Force Metrology and Calibration (AFMETCAL) for this equipment. For further information contact AFMOA/SGAL. (T-1)

2.33.1.3. General purpose test equipment (oscilloscopes, digital multimeters, frequency counters, etc.) will be calibrated IAW AFI 21-113, *Air Force Metrology and Calibration (AFMETCAL) Management*, TO 00-20-14, and TO 33K-1-100-2, *Equipment Calibration Requirements List*. Calibration determinations are published in TO 33K-1-100-2 for general purpose test equipment. Calibration determination requests (AFTO Form 45) will be submitted through AFMOA/SGAL to AFMETCAL, for general purpose test equipment not listed in TO 33K-1-100-2. (T-1)

2.33.2. BMETs will use PMEL services where available for applicable services defined in paragraph 2.33.1. (T-1)

2.33.3. The medical equipment maintenance activity will designate a PMEL Monitor. The PMEL Monitor is responsible for ensuring all test equipment that can be calibrated by PMEL is included in the PMEL program. Equipment included in the PMEL program will be delivered to PMEL in a timely manner. The monitor will verify PMEL equipment has a current Air Force Technical Order (AFTO) Form 99, 108, 394, or 398, *Test, Measurement and Diagnostic Equipment (TMDE) Certification*. (T-1)

2.33.4. The PMEL monitor will annually review and update the PMEL list of equipment to ensure all items that need calibration are included. For new test equipment items not listed in TO 33K 1-100-1, contact AFMOA/SGALE. (T-1)

2.33.5. Scales used in the AF Fitness Program will be calibrated by PMEL. BMETs may calibrate/certify all scales used for patient diagnostic purposes within the MTF. Scales not used for patient diagnostic purposes do not require certification. (T-1)

2.33.6. Weights owned by local medical equipment maintenance activities will be calibrated by PMEL. (T-1)

2.33.7. If PMEL support is not available, or is unable to perform the specified calibration/certification, the local BMET will ensure the TMDE is calibrated/certified IAW paragraph 2.10.10. of this instruction. (T-1)

2.33.8. BMETs will complete a priority cover letter IAW TO 00-20-14 and coordinate with PMEL scheduler for critical TMDE items required for daily operations (time sensitive calibration/repair). (T-1)

Chapter 3

ESTABLISHING A MEDICAL EQUIPMENT REPAIR CENTER (MERC)

3.1. Program Elements.

3.1.1. A Medical Equipment Repair Center (MERC) is a consolidated maintenance activity that, in addition to providing organizational maintenance support for the facility to which it is assigned, provides regional maintenance, engineering support, and consulting services to active component AF, AFRC, and ANG medical activities located in its geographical region.

3.1.2. Medical equipment maintenance activities designated as MERCs are determined by AFMOA/SGALE and the 4A2X0 Career Field Manager (CFM). MERC supported units are listed by designated region on the AFML website.

3.2. Responsibilities.

3.2.1. MERC Officer in Charge (OIC), Chief, or Superintendent will:

3.2.1.1. Budget and plan for all resources required for regional MERC support, including funding, staffing, facilities, vehicles, training, and test equipment. (T-2)

3.2.1.2. Provide maintenance support to all medical activities in the MERC's designated geographic region of responsibility. (T-2)

3.2.1.3. Inform the MAJCOM Functional Manager (MFM), AFMOA/SGALE, and the CFM of problems that may preclude the MERC from accomplishing its mission. (T-2)

3.2.2. Medical Equipment Repair Center (MERC) will:

3.2.2.1. Provide organizational maintenance when practical to medical facilities, including AFRC and ANG, within their region, that do not have a BMET assigned, and when the nearest DoD medical maintenance activity is not capable. (T-0, 42 CFR, Part 482)

3.2.2.2. Provide scheduled maintenance support and emergency repair service (if determined most cost effective) upon request. (T-2)

3.2.2.3. Guide supported bases on obtaining non-emergency minor services upon request. (T-3)

3.2.2.4. Conduct an annual site visit to all MTFs within their region. (T-1)

3.2.2.4.1. The objectives of the annual MERC site visit will be determined by a pre-visit needs assessment conducted at least 30 days in advance. At a minimum, the assessment will survey personnel skill levels, training gaps, local test equipment capabilities, and equipment maintained by service contracts. It will ensure only devices requiring direct MERC support are projected for, and receive maintenance, during the visit. (T-1)

3.2.2.4.2. MERCs will use the supported MTF's TMDE when possible. The calibration expiration dates, functionality status, and serial numbers of all TMDE will be gathered during the pre-visit needs assessment. (T-3)

3.2.2.5. Provide intermediate maintenance and/or requested training to all medical facilities in their designated area that have BMETs authorized and assigned. The MERC will:

3.2.2.5.1. Provide calibration service for audiometers every 365 days or less IAW ANSI S3.6-1996. If the MERC is unable to meet this timeline, it must notify the local facility so alternative arrangements can be coordinated. (T-1)

3.2.2.5.2. Provide oversight of all x-ray systems and performs PCRI on all x-ray systems not performed locally. (T-1)

3.2.2.5.3. Provide calibration service for any equipment at supported units that the local maintenance activity lacks training, skill set, or authorization to perform. (T-1)

3.2.2.5.4. Perform quality assurance (QA) testing on anesthesia equipment, picture archiving and communication systems (i.e. monitors and computed radiography devices), and ventilators to include WRM, Medical Counter Chemical, Biological, Radiological and Nuclear (MC-CBRN), AE, and PMI assets. Additional QA testing may be performed based on experience and skill level at the MTF. For the purpose of QA testing, the MERC will test ten (10) percent, but not less than two devices from each equipment category listed above. For those MERCs that support PMI centers, the MERC shall test at least four devices from each equipment category, and these items are not to be included in the ten (10) percent calculation for the organization. If the MERC notes a deficiency in a selected sample, the MERC will provide training and assist in testing all items in the equipment group. If items are on contract, the local BMET notifies the COR of the discrepancy and requests the contractor to perform corrective actions. (T-1)

3.2.2.6. Document work accomplished and repair parts issued IAW this AFI and AFMAN 41-216. (T-2)

3.2.2.7. Provide technical assistance to resolve maintenance problems beyond the capability of the local BMET. (T-2)

3.2.2.8. Assist local BMET with pre-procurement evaluations for planned complex equipment procurement such as x-ray units, sterilizers, and central patient monitoring systems as required. (T-2)

3.2.2.9. Validate capabilities and assist local BMETs with equipment acceptance inspections for contractor-installed equipment items, if requested. (T-2)

3.2.2.10. Assist regional Health Facility Office in selecting equipment for military construction programs as required. (T-2)

3.2.2.11. Host regional training workshops and seminars as required. (T-2)

3.2.2.12. Assist AFMOA/SGALE with evaluation of centralized maintenance contracts as required. (T-2)

3.3. MERC Trip Reports.

3.3.1. The MERC will prepare a trip report documenting services performed at the local MTF/supported activity. Trip reports will be numbered consecutively beginning with the

start of each fiscal year. For example, 13001 would be the first report prepared in FY 13. At a minimum, the MERC Trip Report will include: (T-3)

3.3.1.1. Purpose of the visit, key personnel contacted, and an executive summary with all items of interest to the MTF commander (major safety violations, equipment problems, and other matters). (T-3)

3.3.1.2. Work-hour and dollar value summary of services performed. **Note:** When the MERC visits more than one facility in a single trip, base the distribution of per diem and travel expenses on the relative percentage of total work-hours expended at each facility. (T-3)

3.3.1.3. Complete description of MERC services provided, equipment discrepancies, calibration and test equipment used, copies of all calibration documentation, and a summary of training provided. (T-3)

3.3.2. Provide electronic report to the MLFC, senior BMET, MAJCOM functional manager, and AFMOA/SGALE within 45 days of completing the maintenance visit. Send copies of any PCRIs conducted to the appropriate regional medical physicist (See AFI 48-148, *Ionizing Radiation Protection*). Send copy of trip report to visited ARC unit and appropriate headquarters. (T-3)

3.3.3. MERCs will maintain copies of completed trip reports and responses for two years IAW AFRDS Table 41-04, Rule 31.00. (T-3)

3.4. Reducing or Terminating MERC Support.

3.4.1. When a MERC anticipates an unavoidable reduction in support, the MERC will coordinate with the supported activity, the MFM, 4A2 CFM, and AFMOA/SGALE at least 60 days before a scheduled visit. (T-2)

3.4.2. When there is a reduction in support, the supported activity will arrange for equipment calibration, as required, by transporting the equipment to the MERC or by using contract support. (T-2)

3.5. Responsibilities of the MERC-Supported Base.

3.5.1. Units supported by MERCs will:

3.5.1.1. Notify the MERC 60 days prior to receipt of new equipment requiring support. (T-2)

3.5.1.2. Inform the MTF commander, administrator, and MLFC of a scheduled MERC visit. (T-2)

3.5.1.3. Inform departments that have equipment requiring MERC calibration, at least 30 days prior to a scheduled MERC visit, in order to minimize disruption to patient care. (T-2)

3.5.1.4. **(Local BMETs)** document all the work performed by the MERC in DMLSS or on AF Form 509. (T-2)

3.5.1.5. Locate and complete PMs on equipment to be calibrated by the MERC. (T-2)

3.5.1.6. Set up and ensure operational status of WRM equipment (x-ray units, ISO shelter, power generator, anesthesia, etc.) scheduled for calibration by the MERC. (T-2)

3.5.1.7. Ensure battery operated equipment is fully charged. (T-2)

3.5.2. Supported bases respond in writing, within 45 days of receiving report, to the MERC, MAJCOM functional manager, and AFMOA/SGALE for all items that require local action. (T-2)

Chapter 4

ELECTRICAL SAFETY PROGRAM

4.1. Purpose. The MTF is a unique environment and requires special procedures to ensure the electrical safety of patients and staff. Facilities will establish a proactive electrical safety program to identify potential hazards, correct hazards, and train personnel. Unless otherwise directed in this instruction, the MTF electrical safety program will adhere to the standards established by NFPA 99, *Health Care Facilities*, NFPA 101, *Life Safety Code*, NFPA 70, *National Electrical Code*, Unified Facilities Criteria (UFC) 3-560-01, *Electrical Safety, O&M*, UFC 3-501-01, *Electrical Engineering for Arc Flash*, and AFI 91-203.

4.2. Responsibilities.

4.2.1. MTF Commander will:

- 4.2.1.1. Approve the Electrical Safety Program and ensure inclusion in local training programs. (T-0, NFPA 99)
- 4.2.1.2. Approve local electrical safety procedures established to satisfy special or unique safety requirements. (T-0, NFPA 99)
- 4.2.1.3. Approve in writing the designation of patient care areas as critical care, general care, basic care, or support. (See NFPA 99, paragraphs 1.3.4. and 3.3.138.) (T-0, NFPA 99)
- 4.2.1.4. Approve in writing the designation of Anesthetizing Locations. (See NFPA 99, paragraphs 1.3.4.2. and 3.3.9.) (T-0, NFPA 99)
- 4.2.1.5. Approve in writing the designation of Wet Procedure Locations. (See NFPA 99, paragraphs 1.3.4.3. and 3.3.184.) Operating Rooms are considered a Wet Procedure Location unless a risk assessment determines otherwise. (See NFPA 99, paragraph 6.3.2.2.8.4. and Annex A.6.3.2.2.8.4.) (T-0, NFPA 99)
- 4.2.1.6. Approve policy and procedures for the use of privately owned, line-powered electrical devices. (T-0, NFPA 99)

4.2.2. FM will:

- 4.2.2.1. Maintain the overall electrical safety program for MTF. (T-0, NFPA 99)
- 4.2.2.2. Ensure the identification and correction of electrical safety hazards. (T-0, NFPA 99)
- 4.2.2.3. Coordinate with Real Property maintainers (BCE or preventative maintenance contractor) to ensure inspections of the power distribution and emergency power systems are performed and documented IAW applicable accreditation standards. (T-0, NFPA 99)

4.2.3. Medical Maintenance will:

- 4.2.3.1. Assist MTF staff by providing user education on electrical safety, as required. (T-0, NFPA 99 and TJC)
- 4.2.3.2. Ensure equipment proposed for purchase is compatible with existing utility systems. (T-0, NFPA 99 and TJC)

4.2.3.3. Maintain documentation of medical equipment safety testing. (T-0, NFPA 99 and TJC)

4.2.4. Medical Materiel and MEMO will coordinate with Medical Maintenance and Facilities Management to ensure the acquisition of equipment and supplies comply with electrical safety standards IAW this AFI. (T-1)

4.2.5. MTF Environment of Care (EOC)® Committee/Facilities and Environment Function (FEF) will:

4.2.5.1. Review and oversee MTF electrical safety programs. (T-0, TJC)

4.2.5.2. Review and recommend local electrical safety actions and procedures to the MTF Commander, Medical Support Squadron Commander, or Administrator. (T-0, TJC)

4.2.6. Chief of the Medical Staff, In-Service Education Coordinators, Squadron Commanders, and Department Chiefs will:

4.2.6.1. Ensure staff is trained on electrical safety awareness and proper operation of medical equipment. (T-0, NFPA 99)

4.2.6.2. Ensure electrical safety training is documented. (T-0, NFPA 99)

4.2.7. Real Property Maintainers (BCE or Preventive Maintenance Contractor) will:

4.2.7.1. Provide engineering support for required installation, maintenance, and testing of MTF power distribution systems. (T-0, NFPA 99)

4.2.7.2. Test grounding systems in Patient Care Rooms IAW NFPA 99, Chapter 6 and AFI 32-1065, *Grounding Systems*. (T-0, NFPA 99)

4.2.7.3. Test receptacles, isolated power systems, line isolation monitors (LIMs), and Ground Fault Circuit Interrupters (GFCIs) in Patient Care Rooms IAW NFPA 99, Chapter 6. (T-0, NFPA 99)

4.2.7.4. Test Alternate Power Systems and Transfer Switches IAW NFPA 99, Chapter 6, and NFPA 110, *Standard for Emergency and Standby Power Systems*, Chapter 8. (T-0, NFPA 99)

4.2.8. Equipment users and staff will:

4.2.8.1. Operate equipment in accordance with manufacturer recommendations. (T-0, NFPA 99 and FDA)

4.2.8.2. Ensure equipment is visually inspected for electrical hazards and known problems are corrected before equipment is used. (T-0, NFPA 99 and FDA)

4.2.8.3. Ensure identified hazards are reported IAW MTF procedures. (T-0, NFPA 99 and FDA)

4.3. Staff Training.

4.3.1. Department supervisors will train staff and incorporate the following:

4.3.1.1. Orientations including procedures for reporting safety hazards, points of contact for corrections, accident reporting and investigation procedures, and hazards unique to the work area. (T-0, NFPA 99, NFPA 101, and TJC)

4.3.1.2. Electrical Safety Briefings as a minimum: program changes, the results of EOC/FEF's findings from the MTF's safety program, and periodic training in fire reporting and suppression. (T-0, NFPA 99, NFPA 101, and TJC)

4.3.1.3. Documentation. All training (user/operator, safety, etc.) will be appropriately documented. (T-0, NFPA 99, NFPA 101, and TJC)

4.4. Extension Cords and Adapters.

4.4.1. The MTF Safety Officer will approve or disapprove, in writing, any use of extension cords in patient care areas. (T-0, NFPA 99)

4.4.2. If extension cords are used, the cords will be appropriately rated and sized to support expected loads (but not smaller than #16 AWG) with hospital grade connectors IAW NFPA 99. (T-0, NFPA 99)

4.4.3. When an extension cord is used in patient care area to support medical equipment operation, an electrical safety inspection will be performed with the extension cord in the circuit. (T-0, NFPA 99)

4.4.4. When an extension cord is used to support medical equipment for an extended period, Medical Maintenance will coordinate with the Safety Officer and FM to initiate a work order to install appropriately placed permanent power receptacle(s) in order to minimize or eliminate the need for the extension cord. (T-0, NFPA 99)

4.4.5. Extension cords of any type are prohibited in areas where flammables are used or stored. (T-0, NFPA 99)

4.5. Power Strips/Surge Protectors:

4.5.1. The MTF Safety Officer will approve use of power strips/surge protectors with non-medical equipment. Medical Maintenance must evaluate and approve power strips/surge protectors used with medical equipment. (T-0, NFPA 99)

4.5.2. The maximum amperage rating of the power strip/surge protector must never be less than the appliance cord rating nor greater than the electrical rating of the power receptacle. (T-0, NFPA 99)

4.5.3. Power strips/surge protectors can be used to extend power from the wall receptacle to support low amperage computers and office equipment. (T-0, NFPA 99)

4.5.4. Power strips/surge protectors will not be connected to another power strip/surge protector or extension cord (no daisy-chaining). (T-0, NFPA 99)

4.5.5. Extension cords and power strips/surge protectors will be visually inspected annually by the Department or Section Safety Monitor. (T-0, NFPA 99)

4.6. Use of Privately Owned Equipment.

4.6.1. For patient-owned medical equipment, the Safety Officer will develop local written procedures to control the use of patient-owned electrical devices in patient care environments. These procedures must ensure:

4.6.1.1. Visual safety inspection of the device by personnel trained by Medical Maintenance. (T-0, NFPA 99)

4.6.1.2. Approval by a medical provider who has determined that the patient is mentally and physically capable to use the device in a safe manner. (T-0, NFPA 99)

4.6.2. Staff-owned medical electrical devices will conform to the same requirements as MTF medical equipment. (T-0, NFPA 99)

4.6.3. Staff-owned nonmedical electrical devices used in patient care areas are subject to the same safety requirements as MTF medical equipment. (T-0, NFPA 99)

4.7. Equipment Electrical Safety Testing.

4.7.1. Medical Maintenance is responsible for electrical safety inspections of medical equipment used in patient care areas IAW NFPA 99, Chapter 6 and Chapter 10. (T-0, NFPA 99)

4.7.1.1. Electrical safety inspections will include visual inspection of the unit, physical integrity of power cords and strain reliefs, resistance test, leakage current, and other appropriate tests defined in NFPA 99. (T-0, NFPA 99)

4.7.1.2. Electrical safety inspection results will be documented on work orders. (T-0, NFPA 99)

4.7.2. Electrical Safety Testing Intervals.

4.7.2.1. All patient care related electrical equipment used in patient care rooms will be tested before being put into service for the first time and after any repair or modification that may have compromised electrical safety. (T-0, NFPA 99)

4.7.2.2. Wet procedure locations will be provided with special protection against electrical shock (See NFPA 99, 6.3.2.2.8.2). In existing construction, special protection against electrical shock is not required if: (T-0, NFPA 99)

4.7.2.2.1. The MTF develops and maintains written procedures for electrical safety testing that includes continuity testing of all equipment, grounding conductors, and their connections. (T-0, NFPA 99)

4.7.2.2.2. The written procedures include requirements for testing fixed receptacles, equipment connected by cord and plug, fixed electrical equipment when first installed, where there is evidence of damage, after any repairs, and routinely at intervals not exceeding 6 months. (T-0, NFPA 99)

Chapter 5

FACILITY MANAGEMENT (FM)

5.1. Responsibilities.

5.1.1. MTF Commander will:

5.1.1.1. Appoint a Safety Officer in writing IAW TJC and/or AAAHC as appropriate and a Resource Protection Officer IAW AFI 31-101, *Integrated Defense*. (T-0, TJC EC.01.01.01)

5.1.1.1.1. Appointment letter provides authority to report, investigate, and continually monitor the following:

5.1.1.1.1.1. Injuries to patients or others within the MTF. (T-0, TJC EC.01.01.01)

5.1.1.1.1.2. Occupational illnesses or injuries to staff. (T-0, TJC, EC.01.01.01)

5.1.1.1.1.3. Incidents of damage to MTF property or the property of others. (T-0, TJC EC.01.01.01)

5.1.1.1.1.4. Security incidents involving patients, staff, or others within the MTF. (T-0, TJC EC.01.01.01)

5.1.1.1.1.5. Hazardous materials and waste spills and use errors. (T-0, TJC EC.01.01.01)

5.1.1.1.1.6. Fire safety management problems, deficiencies, and failures. (T-0, TJC EC.01.01.01)

5.1.1.1.1.7. Utility systems management problems, failures, or use errors. (T-0, TJC EC.01.01.01)

5.1.1.1.1.8. Conservation of energy and resources to attain Federal, DoD, Air Force, and AFMS mandated targets and program initiatives.

5.1.1.2. Appoint the Facility Manager, (or designee), in writing, as Resource Protection Program Manager. (T-0, TJC)

5.1.1.3. Ensure representatives from clinical, administrative, and support services participate in the analysis of data collected in paragraph 5.4.2.1. through paragraph 5.4.2.9. of this instruction to identify methods or procedures to reduce or eliminate occurrences before discovery. (**Note:** Both hospital Environment of Care® (EOC) committee and Facilities/Environmental Function (FEF) clinic related functional meetings, should occur at least monthly but no less than quarterly as determined based upon healthcare occupancy and services offered as written in each organizational policy). (T-0, TJC)

5.1.1.4. Direct annual review of the data and trends collected in paragraph 5.4.2.1. through paragraph 5.4.2.9. of this instruction to determine if opportunities to improve the environment of care were met or needs to be improved and/or monitored for the following year. (T-0, TJC EC.04.01.03)

5.1.1.5. Appoint, in writing, a primary and alternate real property custodian for each department/service to support facility management operations in the sustainment and repair of the medical infrastructure for the using activities. (T-3)

5.1.1.5.1. This responsibility can be delegated to the medical squadron commanders. This will not be delegated to a single squadron commander within the medical group. If delegated, squadron commanders will appoint all custodians assigned to their respective squadrons. (T-3)

5.1.1.5.2. A real property custodian may be appointed for more than one using activity, depending on the organization's size and scope.

5.1.1.5.3. If both real property custodians are absent from the MTF for over 45 days, replacement primary and alternate custodians must be appointed. If both the primary and alternate are absent for less than 45 days, replacement custodians may be appointed at the discretion of the Squadron Commander. (T-3)

5.1.1.6. Appoint the MLFC as Functional Commander (FC) for all medical contracts providing facility operations and maintenance, and housekeeping services. (T-3)

5.1.2. Administrator will:

5.1.2.1. Chair the Environment of Care® Committee (EOCC) for hospitals and medical centers, and/or oversees related meeting(s). (T-1)

5.1.2.2. Accompany the FM section and related disciplines (i.e. Infection Control Officer, BMETs, Safety, etc.) during semi-annual environmental tours of all areas where patients receive care, and annual review of all other areas. (T-0, TJC EC.04.01.01 and AAAHC)

5.1.2.3. Conduct an annual review of the electronic Statement of Conditions (SOC), Basic Building Information (BBI), and Plans for Improvement (PFIs) for all hospital NFPA 101, and Life Safety Code deficiencies not correctable within 45 days. The purpose of this review is to ensure complete and accurate information will be sent to the accreditation body. (T-0, TJC LS.01.01.01)

5.1.2.4. Appoint Medical Readiness Committee as office of primary responsibility (OPR) and FM as office of coordinating responsibility (OCR) for emergency management. (Note: Hospitals and clinics use the Medical Contingency Response Plan (MCRP) to address accrediting organizations' standards. Hospitals comply with TJC's Emergency Management standards and clinics comply with AAAHC standards.) (T-0)

5.1.2.5. Act as or designate Incident Commander during fire alarm activations, scheduled and unscheduled utility outages affecting the delivery of health care services, and peacetime and contingency exercises or real world events. (T-3)

5.1.2.6. Approve on-the-job task listing and qualifications for current or proposed Facility Manager, to ensure member is qualified to assess building compliance with NFPA 101, complete the SOC, and manage the resolution of NFPA 101 and other building deficiencies. (T-3)

5.1.2.7. Appoint, in writing (or delegate MLFC to appoint), Facility Manager as primary POC for medical waste program. (T-3)

5.1.3. Facility Manager will:

5.1.3.1. Attend the basic Medical Facilities Management Course once appointed (preferably within 6 months) and should attend the recurring core conference/symposium to gain valuable knowledge for continuing medical education IAW AF and command training/conference attendance policies and procedures. Coordinate attendance with the respective Sustainment, Restoration, and Modernization Portfolio Manager (SRM PM). (T-3)

5.1.3.2. Responsible to maintain an accurate real property inventory.

5.1.3.2.1. Annually reconciles real property records in DMLSS with the BCE Automated Civil Engineer System (ACES). (T-1)

5.1.3.2.2. Responsible for Facilities Management financial planning, programming, budgeting, and monitoring of expenses. Refer to paragraph 5.8. of this instruction. (T-1)

5.1.3.3. Prepare, send, and monitor work requests to the Real Property Maintainers. Develop MTF guidance and directives for contacting BCE and/or other support engineering after normal duty hours. (T-3)

5.1.3.3.1. Coordinate with SRM PM to develop Performance Work Statements (PWS) for facility requirements. (T-3)

5.1.3.3.2. Performance Work Statement templates are available on the Knowledge Exchange, Health Facilities Division website: <https://kx2.afms.mil/kj/kx3/Facilities/Documents/Forms/ShowFolders.aspx>.

5.1.3.4. Develop and maintain a long-range master facility improvement plan (MFIP). The MFIP documents ongoing preventive and corrective maintenance activities and condition assessment of existing infrastructure. (T-1)

5.1.3.4.1. Master facility improvement plan includes: Future Year Defense Plan (FYDP) + 2 years unfunded requirements for Military Construction (MILCON) or Operations and Maintenance (O&M). (T-1)

5.1.3.4.2. Ensure projects are entered in the BCE ACES-PM system, and an ACES project number is assigned. (T-1)

5.1.3.5. Ensure each medical building has an appropriate Q-Rating assigned in ACES. Unfunded sustainment, restoration, and modernization projects will impact the building Q-Rating. (T-1)

5.1.3.6. Maintain hardcopy and archived electronic version of as-built and current architectural drawings, plans, diagrams, and other records for each facility designated with a medical real property category code (5XX-XXX). Drawings will include all fire and smoke barriers (walls/doors/floors), and utility shut-off valves and controls. (T-0, TJC LS.01.01.01)

5.1.3.6.1. Ensure as-built drawings provided to the MTF at the completion of each project are delivered in electronic format compatible with DMLSS-FM (prefer standard *.dwg). (T-0, TJC LS.01.01.01 and AAAHC)

5.1.3.7. Serve as the Real Property Building Manager and member of the Medical Facility Utilization Board. Coordinate on all moves/relocations that will involve a change in use/function, or changes the occupancy of that space, IAW NFPA 101, Chapter 6, *Classification of Occupancy and Hazard of Contents*. (T-3)

5.1.3.7.1. Determine and/or coordinate required facility and utility modifications for proposed equipment and information technology (IT) installations when an equipment requirement is initiated IAW AFI 41-209. (T-3)

5.1.3.8. Direct the input of all facility work order and project requirements into DMLSS-FM. (T-0, TJC LS.01.01.01)

5.1.3.9. Maintain a written Interim Life Safety Measures (ILSMs) policy detailing how the facility will protect patients, staff, and visitors during temporary periods when NFPA 101 is not met.

5.1.3.9.1. All work orders open for more than 45 days that affect NFPA 101 compliance must be listed on the SOC as an open PFI for TJC accredited MTFs. Though not required to maintain a SOC, AAAHC accredited FM will develop NFPA 101 assessment and tracking processes (with projected completion dates) to meet the fire protection requirements IAW NFPA 101. The Facility Manager coordinates PFIs with the Base Fire Chief (Authority Having Jurisdiction (AHJ)). (T-0, TJC LS.01.01.01, AAAHC)

5.1.3.9.2. Each identified life safety deficiency will be formally assessed to determine the implementation of applicable ILSMs. This documentation needs to be maintained and coordinated with the Base Fire Chief/AHJ. (T-0, TJC LS.01.01.01, AAAHC)

5.1.3.10. Implements the MTF smoking policy IAW AFI 40-102, *Tobacco Use in the Air Force*, AFI 91-203, and TJC/AAAHC guidance. Conduct performance monitoring routinely, to assess compliance. (T-1)

5.1.3.11. Assess interior furnishings and wall/floor coverings for NFPA code compliance (flame spread, combustibility, etc.) prior to procurement and as required.

5.1.3.12. Conduct annual review of AF Form 1487, *Fire Prevention Visit Report*, and summarize corrective actions for the EOCC® or related function.

5.1.3.13. Conduct an Infection Control Risk Assessment (ICRA) and determine suitability of instituting appropriate ILSMs, when projects interfere with fire protection.

5.1.3.14. Notify the Administrator, Chief of the Medical Staff, and Chief Nurse when projects or work orders affect delivery of health care services.

5.1.3.15. Oversee fire prevention/protection programs and coordinate fire drill requirements, IAW NFPA 101, with BCE and Base Fire Chief/AHJ or alternate. A representative from the Fire Department must be present when conducting fire drills in critical inpatient areas. Conduct, no less than annually, a review to specifically identify NFPA 101 code deficiencies (adequacy of egress, exits, and fire protection features). (T-0, NFPA 101, AAAHC Chap 8)

- 5.1.3.16. Coordinate with the BCE Real Property section to ensure AFMS-owned buildings are assigned proper category code (5XX-XXX).
- 5.1.3.17. Collaborate with the MTF Resources Management Office (RMO) to review funding mechanisms, track balances, and determine reimbursables.
- 5.1.3.18. Act as or oversee the Safety Officer, and serve as a member of the EOC/FEF and/or related functional committee. Accompany Safety Officer on semi-annual walk-throughs of Patient Care Rooms and annually in non-Patient Care Rooms. Ensure tours and deficiencies are documented and addressed. Report results/trends to EOC/related functional committee. (T-0, TJC EC.04.01.01 and AAAHC)
- 5.1.3.19. Ensure compliance with standards published by TJC and AAAHC, and other codes and standards such as the NFPA, Occupational Safety & Health Administration (OSHA), and Environmental Protection Agency (EPA). (T-0, TJC EC and LS chapters; AAAHC Chapters 7 and 8)
- 5.1.3.20. Operate and maintain the facility IAW Engineering Technical Letters (ETLs), AFMS HFD Quality Engineering Design Guide, AFMS Health Facilities Energy Guide, and federal, state, and local regulations.
- 5.1.3.21. Assign or act as the surveillance monitor to oversee contracted Housekeeping/Hospital Aseptic Management Services (HAMS). (T-1)
- 5.1.3.22. If designated as Security/Resource Protection Officer, the Facility Manager will coordinate on all programs involving the protection of equipment, staff, and the physical plant IAW AFI 31-101. (T-0, TJC EC.02.01.01; AAAHC Chapter 8)
- 5.1.3.23. Review BCE and/or Air Force Medical Support Agency (AFMSA) centralized contracts that provide the MTF with refuse collection, elevator maintenance, hood and return/outside air duct cleaning, and other contractual services.
- 5.1.3.24. Manage the MTF and grounds maintenance programs. Ensure snow and ice removal is conducted prior to the start of hours of operation.
- 5.1.3.25. Ensure emergency power system is adequate and reliable IAW TJC, AAAHC, UFC 4-510-01, *Design: Military Medical Facilities with Change 1*, NFPA 99, NFPA 101, and NFPA 110. (T-0)
- 5.1.3.26. Develop and manage the Energy Conservation Program. (T-3)
- 5.1.3.27. Oversee contract for removal, treatment, storage, and disposal of regulated medical waste (RMW). Medical waste must be tracked “cradle to grave.” Carrier manifests must be filed with destruction certificates. (T-0, TJC EC.02.02.01, DoT)
- 5.1.3.28. Verify and ensure all waste handlers training is documented IAW federal, state, and local regulations.
- 5.1.3.29. Serve as member of the Infection Control Committee or delegate to Safety Officer or Housekeeping Quality Assurance Evaluator (QAE).
- 5.1.3.30. Serve as a member or advisor of the Equipment Review and Authorization Activity (ERAA).

5.1.3.31. Coordinate with BCE to ensure MTF requirements are included in the base refuse contract.

5.1.3.32. Establish and monitor training program for real property custodians. FM will conduct initial and quarterly training that covers responsibilities, FM operations, and the DMLSS-FM Customer Service module. (T-3)

5.1.3.33. Maintain a copy of real property custodian appointment letters. (T-3)

5.1.3.34. Implement the DMLSS-FM Customer Service Module for all departments/services with an assigned real property custodian.

5.1.3.35. Ensure deficiencies noted during inspections and assessments are corrected or document a plan for correction.

5.1.3.36. Resolve findings identified during a Management Assist Visit (MAV) and maintain copies of MAV reports for three years IAW AFRDS Table 41-04, Rule 31.00. (T-3)

5.1.4. Safety Officer will:

5.1.4.1. Serve as the FM point of contact for all safety-related matters.

5.1.4.2. Coordinate with Installation Safety Office, Bioenvironmental Engineering (BEE), BCE, Public Health, BMET, Patient Safety Office, and infection control on MTF safety issues. (See AFI 91-202, *The US Air Force Mishap Prevention Program*, and AFI 91-204, *Safety Investigations and Reports*.)

5.1.4.3. Submit mishap reports IAW AFI 91-204 to the Wing Safety Office. (T-3)

5.1.4.4. Ensure all medical facility personnel receive initial and annual refresher safety training and that supervisors document all related safety training on AF Form 55, *Employee Safety and Health Record*, IAW AFI 91-203. Assist with development and annual review of departmental safety briefings and new-comers orientation programs. (T-3)

5.1.4.5. Identify and correct environmental hazards and unsafe practices. (See AFI 91-203)

5.1.4.6. Ensure staff members submit AF Form 765, Medical Treatment Facility Incident Statement, to the Patient Safety Office/risk manager for reportable incidents involving patients, visitors, or staff. (T-0, TJC EC.04.01.01 and AAAHC)

5.1.4.7. Annually present safety program, including results of inspections by outside agencies, at EOC/FEF meetings.

5.1.4.8. Serve as the area fire marshal IAW AFI 32-2001, *Fire Emergency Services Program*, and local procedures. (T-3)

5.1.4.9. Report the results of fire exit/response drills to the EOC, FEF, or related committee.

5.1.4.10. Review waste handling procedures to ensure compliance with federal, state, and local hazardous materials and regulated medical waste management. Ensure

supervisors document hazardous materials and regulated medical waste training on AF Form 55 IAW AFI 91-203..

5.1.5. Real Property Custodian will:

5.1.5.1. Use DMLSS-FM Customer Service module to request and monitor all sustainment and repair activities for the department/service.

5.1.5.2. Attend initial and quarterly training conducted by FM.

5.2. Inspection Program.

5.2.1. The Air Force facilities inspection prepares MTFs for Unit Effectiveness Inspections (UEI) and TJC/AAAHC accreditation surveys including self-assessment, risk assessment, and management assistance visits. The Staff Assistance Visit (SAV) checklist is available on the AFMS Knowledge Exchange, under the Support Functional View, Health Facilities, Facility Managers, Quick Reference Guides.

5.3. Financial Management.

5.3.1. The Facility Manager conducts an annual real property inventory ensuring DMLSS-FM real property physical description is completed for all AFMS buildings to include Veterinary Clinics, War Reserve Material (WRM) warehouses, and plant/energy buildings. ANG and AFRC, Drug Demand Reduction, Gymnasiums (HAWCs), Fisher Houses, or Physiological Training Unit buildings will not be included in the inventory. Buildings (or space within a building) that are medical funded are coded in ACES by the BCE Resources Flight as Fund Organization 2H (TMA: TRICARE MANAGEMENT ACTIVITY) and Funding Code 0130 (DHP: DEFENSE HEALTH PROGRAM) for SRM and 0500 (MILCON) for replacement. Each real property record will need to be individually changed in ACES if the fund organization codes and funding codes are incorrect.

5.3.2. Annual budget submissions will include: materials, labor, supplies, utilities, BCE and/or other engineering support reimbursables, construction, and all contract service costs. Break down the items by Element of Expense/Investment Code (EEIC). Comply with financial management suspense dates and taskings generated by AFMSA/SG8F and AFMOA.

5.3.3. The Facility Manager monitors reimbursable expenses and contract costs.

5.3.3.1. FM will use work order logs and reports provided by BCE from the Interim Work Information Management System (IWIMS) or the IWIMS replacement, Automated Civil Engineer System-Operations Module (ACES-Ops), to evaluate these expenses. The work order logs will be automated within the DMLSS-FM Work Request module and work orders logs between BCE and MTF will be reconciled at least monthly. (T-1)

5.3.3.2. FM at overseas locations will request statements of charges for work performed from host-nation engineering support.

5.3.3.3. The FM must validate facility reimbursable costs from BCE with RMO.

5.3.3.4. The FM reviews, approves, and validates utility bills prior to payment. The FM must understand how utility charges are calculated (ie. square feet, usage, personnel). (T-3)

5.4. Environment of Care® (EOC) Committee/Facilities and Environment Function (FEF):

5.4.1. The EOC® Committee shall meet not less than bi-monthly. Membership will be IAW TJC standards. (T-1)

5.4.1.1. The FEF shall meet not less than quarterly. (T-1)

5.4.1.2. Membership will be IAW AAAHC standards or local MDGIs. (T-1)

5.4.2. The EOC® Committee and FEF will:

5.4.2.1. Develop MTF safety policies and standards to be implemented when approved by the MTF executive committee. Review and approve departmental safety policies. (T-3)

5.4.2.2. Evaluate environment of care discrepancies, develop recommendations for corrective action, and ensure corrective measures are implemented. (T-0, TJC EC.04.01.05 and AAAHC)

5.4.2.3. Oversee accident and injury investigations, ensuring the MTF reports and resolves all hazards related to occupational illnesses, injuries to patients/visitors, staff injuries, and other situations that pose a threat to life, health, and property. (T-0, TJC EC.04.01.01 and AAAHC)

5.4.2.4. Monitor, report, and investigate security incidents within its facilities. (T-0, TJC EC.04.01.01 and AAAHC)

5.4.2.5. Develop, review, and evaluate safety education and fire prevention programs and applicable drills. (T-0, TJC EC.04.01.01 and AAAHC)

5.4.2.6. Assess equipment failures or user errors that result in an incident report and review relevant equipment hazard reports. (T-0, TJC EC.04.01.01 and AAAHC)

5.4.2.7. Report and investigate hazardous material and waste spills and exposure. (T-0, TJC EC.04.01.01 and AAAHC)

5.4.2.8. Report and investigate utility systems management problems, failures, or use errors. (T-0, TJC EC.04.01.01 and AAAHC)

5.4.2.9. Ensure implementation of a Risk Assessment Program which evaluates: the risk to patient care, staff and visitor, and safety of the equipment, buildings, grounds, and internal building system. This risk assessment shall also incorporate any remodeling or construction projects. (T-0, TJC EC.04.01.01 and AAAHC)

5.4.3. The EOC® Committee sets policies and procedures for all required TJC EOC® management programs/plans and evaluates each program/plan effectiveness at least annually, and submits to Executive Committee for review/approval.

5.5. Fire Protection and Prevention Program.

5.5.1. The MTF requires additional protection beyond that provided in the base program defined in AFI 32-2001, due to the limited mobility of ill and bedridden patients.

5.5.2. The fire prevention and protection program shall include: documentation of code compliance, review of design and construction, documentation of inspection/testing of fire

warning/suppression systems, documentation of testing and maintenance of individual devices IAW TJC/AAHC accreditation standards, UFC 3-601-02, *Operation and Maintenance: Inspection, Testing, and Maintenance of Fire Protection Systems*, and the hospital's or clinic's overall fire protection and evacuation plans.

5.5.2.1. Each MTF classified as a healthcare occupancy IAW NFPA 101, must comply with NFPA 101, and TJC Comprehensive Accreditation Manual for Hospitals. (T-0)

5.5.2.2. Each MTF classified as an ambulatory healthcare occupancy IAW NFPA 101 must comply with NFPA 101, and the AAHC Manual. (T-0)

5.5.2.3. Each MTF classified as a business occupancy must comply with the appropriate provisions of NFPA 101, and AAHC Manual. (T-0)

5.5.3. A qualified fire inspector inspects the facility at least annually for compliance with NFPA standards. (T-0, NFPA 101; AAHC Chapter 8)

5.5.4. The FM maintains drawings or documents showing the locations of fire protection features (including fire/smoke barriers) in the MTF. (T-0, TJC LS.01.01.01 and AAHC)

5.5.5. Fire Detection and Alarm System. FM ensures the installation, testing, and maintenance of the fire detection and alarm system is IAW NFPA 101, NFPA 72, *National Fire Alarm and Signaling Code*, and UFC 3-601-02, and ensures all required documentation for TJC/AAHC is maintained.

5.5.5.1. The FM coordinates with the MTF maintenance contractor and/or BCE fire protection flight/maintenance contractor to establish schedules for testing, inspecting, and maintaining all fire alarm and fire detection systems in compliance with NFPA standards. (T-0)

5.5.5.2. All testing and maintenance will be documented in the DMLSS-FM Module and sample hardcopies may be printed for required inspections. (T-0)

5.5.5.3. The FM will review the testing documentation with the previous year to identify any adverse trends.

5.5.6. Fire Extinguishing Systems. The FM ensures all automatic fire-extinguishing systems are inspected, tested, and maintained, IAW NFPA 13, *Standard for the Installation of Sprinkler Systems*, and NFPA 25, *Standard for Inspection, Testing, and Maintenance of Water Based Fire Protection Systems*. (T-1)

5.5.6.1. The FM develops a program to manage portable fire extinguishers IAW NFPA 10, *Standard for Portable Fire Extinguishers*. The BCE fire protection flight trains personnel on use of portable extinguishers when not accomplished by maintenance contractor. (T-1)

5.5.6.2. The FM coordinates with section supervisors, or as dictated by local policy, to inspect portable fire extinguishers monthly. These inspections will be documented with the day/month/year along with the inspector's initials IAW AFI 91-203. (T-1)

5.5.7. Fire Response Plan. The Facility Manager develops a written fire plan IAW AFI 91-203 and approved by the installation fire protection services. (T-0, TJC EC.02.03.01, AAHC 8E, NFPA 101)

5.5.8. Fire Exit/Response Drills. The FM conducts and documents fire exit/response drills IAW NFPA 1 and TJC/AAAH standards.

5.5.8.1. Design the fire exit drills to test how well the MTF staff understands and can use the MTF fire alarm and protection systems. The FM must ensure fire drill documentation is complete, available, and reviewed to identify areas for improvement. Areas not passing must be drilled more frequently, until they are compliant in all fire response requirements. (T-0, TJC EC.02.03.01, AAAHC 8E, NFPA 101)

5.5.8.2. During fire exit drills, the safety officer and/or fire department evaluator will check proper alarm transmission, smoke and fire containment procedures, evacuation to areas of refuge, fire extinguisher use, and evacuation preparation. (T-0, TJC, NFPA 101)

5.5.8.3. FM will document fire exit drills by stating date and time of the drill, location, personnel participating (number and sections), staff actions during drill, problems identified, corrective actions taken, and an overall assessment of drill procedures, making note to include applicable information for inpatient facilities (e.g., did staff use the “defend in place” concept). (T-0, TJC, NFPA 101)

5.6. Security and Resource Protection.

5.6.1. The Resource Protection Program Manager (RPP) will develop the MTF security/resource protection program IAW AFI 31-101, DoD 6025.18- R, *DoD Health Information Privacy Regulation*, DoD 8580.02- R, *DoD Health Information Security Regulation*, and AFI 41- 210, Chapter 6, *TRICARE Operations and Patient Administration Functions*. (T-0)

5.6.2. The RPP will maintain a central file with an initial facility evaluation and subsequent surveys of resource protection by Security Forces (SF). Controlled Area Monitors will maintain original survey documentation and forward copies to the FM Office. (T-2)

5.6.3. In coordination with SF, FM will plan, implement, and monitor the MTF security program. FM will:

5.6.3.1. Ensure proper lighting for entrances, parking lot, and sidewalks.

5.6.3.2. Ensure MTF is secure after normal duty hours.

5.6.3.3. Implement the appropriate annexes of MCRP during emergencies and exercises.

5.6.3.4. Ensure resource protection plan addresses controlled areas requiring security alarm systems, vaults, and safes (pharmacy, medical logistics, veterinary clinics, etc.), as applicable.

5.6.3.5. Ensure adequate physical security measures are in place to protect critical utility systems, e.g. emergency generators, medical gas supply, fuel supply, and primary electrical distribution systems. Control access to radio base stations, overhead paging systems, and telephone closets.

5.6.3.6. Report thefts and security protection problems.

5.6.3.7. Perform and document security exercises IAW TJC/AAAH standards.

5.6.3.8. Coordinate with Medical Readiness to incorporate, define, and train MTF staff on standardized response codes for use within the MTF. The following is a recommended list of response codes: (T-0, TJC EC 02.01.01)

5.6.3.8.1. Code Black for Bomb Threat. (T-3)

5.6.3.8.2. Code Red for Fire Protection. (T-3)

5.6.3.8.3. Code Blue for Medical Emergency. (T-3)

5.6.3.8.4. Code Pink for Infant/Child Abduction. (T-3)

5.6.3.8.5. Code Orange for Hazmat Spill/Release. (T-3)

5.6.3.8.6. Code Gray for an armed or dangerous person in the area. (T-3)

5.6.3.8.7. Other Codes, Command Specific Codes, for other emergency responses. (T-3)

5.6.4. AAAHC accredited MTFs will develop, at a minimum, one quarterly scheduled drill to test staff knowledge of the response codes in paragraph 5.6.3.8. of this instruction. The quarterly drills will include at least one Code Blue and one Code Red per year. Document the exercise and develop a plan for improvement based upon testing results. (T-0, AAAHC)

5.6.4.1. TJC accredited MTFs will develop a schedule to test staff knowledge of the response codes in 5.6.3.8. and document the exercise IAW TJC standards. (T-0, TJC EM.03.01.03, AAAHC Chap 8)

5.6.4.2. All MTFs will report the results of the response code exercise to either the MRC or EOC/FEF. (T-0, TJC EM.03.01.03, AAAHC Chap 8)

5.6.5. Ensure intrusion detection equipment is located, installed, and tested IAW AFI 31-101.

5.6.6. Establish and maintain a key control program that includes swipe cards and combinations IAW AFI 31-101. (T-3)

5.7. Emergency Management.

5.7.1. The emergency management plan for AF MTFs is known as the MCRP and is maintained by the Medical Readiness (MR) office IAW AFI 41-106, *Medical Readiness Program Management*. The MCRP addresses all internal and external emergency incident planning and response. (T-1)

5.7.1.1. FM coordinates with MR office on the MCRP affecting the physical plant and utility systems and ensures the MCRP is synchronized, informed, and referenced with the Integrated Emergency Management Plan (IEMP) 10-2 and corresponds to the BCE Contingency Response Plan outlined in AFI 10-211, *Civil Engineer Contingency Response Planning*. The FM maintains the Facilities Management annex (and other applicable annexes, e.g. safety, security, etc.) and reviews other MCRP annexes to coordinate support of other departments, as required and ensures it corresponds to the BCE Contingency Response Plan outlined in AFI 10-211. (T-1)

5.7.1.2. Under the MCRP, the FM may be tasked to support:

5.7.1.2.1. Security and facility access by Security Forces or designated manpower team. (T-3)

5.7.1.2.2. Vehicular traffic control by Security Forces or designated team. (T-3)

5.7.1.2.3. Loss of utilities/systems such as electrical distribution, water, medical gases, HVAC, and escalators/elevators. (T-2)

5.7.1.2.4. Emergency utility shut-off procedures. (T-2)

5.7.1.2.5. Preparation, inspection, and use of the designated alternate facility. (T-2)

5.8. Service Contracting and Surveillance.

5.8.1. FM is authorized to contract for maintenance and other services IAW AFI 41-209.

5.8.2. FM coordinates applicable service contracts with BCE or Base Communications to minimize duplication of services. (T-2)

5.8.2.1. The FM annually reviews applicable contracts to validate necessity terms and conditions. (T-2)

5.8.2.2. The requiring activity Squadron Commander nominates surveillance personnel. Surveillance personnel responsibilities will be performed IAW contract terms and AFI 41-209. If surveillance personnel are assigned from BCE or other non MDG agencies, surveillance reports will be coordinated with FM. (T-3)

5.8.3. Surveillance personnel must use the DMLSS-FM QA module to validate the preventive and corrective maintenance. (T-3)

5.9. Facilities Operation, Maintenance, and Repair.

5.9.1. Facility Manager will:

5.9.1.1. Coordinate with BCE and other support engineering staff IAW AFI 32-1001, *Operations Management*, and local BCE policies on real property operation, maintenance, repair, and projects. (T-1)

5.9.1.2. Annually review operations and maintenance management/Recurring Work Program (RWP) with BCE and/or other support engineering staff IAW AFI 32-1001. Document review and provide written report to MTF EOC/FEF with copy provided to BCE. This report will be an overview of open and completed work orders used to identify trends and opportunities for improvement or planned modernization projects. (T-2)

5.9.1.3. Ensure BCE and/or other support engineering staff, properly document MTF real property operation, maintenance, repair, and projects. This documentation must comply with current TJC/AAHC EOC/FEF standards. (T-3)

5.9.1.4. Provide technical input to BCE and/or other support engineering staff on real property operation, maintenance, repair, and project requirements and priorities. (T-3)

5.9.1.5. Coordinate grounds maintenance and pest control programs IAW AFI 32-1001, and AFI 32-1053, *Integrated Pest Management Program*, with BCE. (T-3)

5.9.1.6. Plan for extended outages of utilities and coordinate with clinical staff in applicable areas. (T-2)

5.9.1.7. Review base support agreement to ensure BCE planned response to contingency adequately supports MTF requirements. (T-2)

5.9.1.8. Brief MTF EOC/FEF on building systems failures, and resolution. (T-2)

5.9.1.9. Verify installed building system blueprints and diagrams are readily available and accurately indicate emergency shutdown controls for all utility systems. (T-2)

5.9.2. Recurring Work Program (RWP).

5.9.2.1. The RWP identifies recurring maintenance on all Real Property Installed Equipment (RPIE). Real property is defined in AFI 32-9005, *Real Property Accountability and Reporting*.

5.9.2.2. Include all MTF Real Property Installed Equipment (RPIE) and utility systems IAW AFI 32-1001 and the Utility Management Plan in a recurring work program. (T-3)

5.9.2.3. FM will work with BCE to ensure recurring maintenance is established at appropriate frequencies IAW manufacturer requirements, NFPA, and TJC/AAAH standards. (T-0, TJC EC.02.03.05, 02.05.07, AAAHC Chapter 8)

5.9.2.4. FM will ensure completion of all electrical safety program requirements IAW Chapter 4.2. (T-3)

5.9.2.5. Documentation of work performed within the RWP will include a combination of DMLSS-FM and hardcopy records. Hardcopy records must be maintained IAW TJC/AAAH standards. (T-3)

5.9.3. Managing Requests for Work.

5.9.3.1. Prepare AF Form 332, *Base Civil Engineer Work Request*, to BCE and/or other support engineers for all work requirements. (T-3)

5.9.3.2. Maintain either electronic or manual logs and records of all work requests submitted to BCE and/or other support engineers. (**Note:** MTFs will maintain all work requests in DMLSS-FM if available.) (T-3)

5.9.3.3. Coordinate work schedules with the MTF staff as needed to minimize disruption to patient care. (T-3)

5.9.3.4. For all contractors or maintenance personnel working in the MTF on a temporary basis, maintain a log that includes arrival and departure times, organization or company, work order or purchase order number, names, and destinations within the MTF. (T-3)

5.9.3.5. Self-help projects will be reviewed by and coordinated with BCE and/or other support engineers. (T-3)

5.10. DMLSS-FM.

5.10.1. FM will use DMLSS-FM including applicable modules. The FM ensures ACES accurately reflects the plant replacement value (PRV) for all assigned buildings. Plant replacement value in ACES is updated annually with new cost factors. (**Note:** Building gross square footage used to calculate PRV is not the same as square footage calculated for HAMS purposes.) (T-2)

5.10.2. The FM ensures appropriate facility management personnel receive DMLSS-FM training. Information regarding DMLSS-FM training classes and on-line self-help training tools are located on the Health Facilities Division AFMS Knowledge Exchange. (T-3)

5.10.3. The FM ensures maintenance contractor uses DMLSS-FM and maintains all applicable data IAW AFMAN 41-216. (T-3)

5.11. Facility Sustainment Restoration and Modernization (SRM).

5.11.1. FM coordinates with Health Facilities Division, MAJCOM, BCE and/or other support engineers to develop plans for addition, alteration, and replacement MILCONs, and SRM MTF projects. Assist BCE and/or other support engineers with the completion of DD Form 1391, *Military Construction Project Data*, for all MILCON projects and minor construction (MC) projects IAW AFI 32-1021, *Planning and Programming Military Construction (MILCON) Projects*. (T-3)

5.11.2. FM identifies projects and ensures project numbers are assigned in ACES and DMLSS-FM to support Q-Rating. (T-2)

5.11.3. FM coordinates with the MLFC, MEMO, biomedical equipment maintenance, and Medical Information Systems Flight for equipment installation when outfitting new MILCON. (T-3)

5.12. Medical Facility Improvement Plan (MFIP).

5.12.1. The MFIP will identify current and future SRM requirements to support the MTF mission within existing facilities IAW AFI 32-1021. The FM will brief the MFIP annually to the MTF executive staff and will document the brief in the meeting minutes. (T-3)

5.12.2. MFIP Content and Organization. Use the following MFIP reports in DMLSS-FM. (See AFMAN 41-216):

5.12.2.1. Facility inventory. (T-3)

5.12.2.2. Conditional assessment Q-Rating on all facilities. (T-3)

5.12.2.3. Includes all significant events such as facility assessment study. (T-3)

5.12.2.4. Contracts supporting facility operations. (T-3)

5.12.2.5. Energy Star rating. (T-3)

5.12.2.6. Monthly PM and CM completion rates. (T-3)

5.12.2.7. Five-year review of projects for each facility. (T-3)

5.12.2.8. Three-year requirements for each facility. (T-3)

5.13. Facility Utilization.

5.13.1. An MTF representative (Facility Manager or Administrator designee) will attend the Base Facility Utilization Board and the Facility Utilization Working Group. (T-3)

5.13.2. FM will provide an annual report of square feet utilized by section to the MTF Resource Manager for use in the Medical Expense and Reporting System (MEPRS). (T-3)

5.13.3. The MTF Commander or Administrator will request a facility assessment study (FAS) at least every five years. An FAS can be requested more often as required.

AFMSA/SG8F provides space planning criteria and conducts facility utilization surveys. (T-3)

5.13.4. The Medical Facility Utilization Board (MFUB), chaired by the MTF Administrator or representative, will evaluate space requirements and provides recommendations to the MTF executive committee, as required. (T-3)

5.14. Facility Signage.

5.14.1. FM will coordinate with the administrator and executive staff to standardize signage IAW the *AFMSA/SG8F Interior Design Guide*, which can be found on the AFMS Knowledge Exchange, under the Support Functional View, Health Facilities tab. The FM ensures all signs inside and outside the MTF are in compliance with all applicable codes, standards, and AFIs. (T-3)

5.15. Housekeeping/Hospital Aseptic Management System (HAMS).

5.15.1. FM will oversees housekeeping functions. (T-3)

5.15.2. AFMSA/SG8F will establish policies and develop the master Performance Work Statement (PWS) for the housekeeping/HAMS contracting program. (T-3)

5.15.3. The Individual Medical Facility Exhibit (IMFE) tailors the general housekeeping PWS to the local MTF. The Facility Manager develops and coordinates the IMFE with key MTF staff (infection control, nursing services, and hospital/clinical services) prior to contract solicitation. (T-3)

5.15.4. FM will request contract changes/modifications through AFMSA/SG8F. (T-3)

5.15.5. FM will monitor compliance IAW the terms of the contract (HAMS, base custodial, local services, etc.). (T-3)

5.15.6. The FM develops a contingency plan to provide service if contract services are suspended or terminated because of a labor strike or contractor default. (T-3)

5.15.7. MTFs not using the HAMS central contract can obtain a housekeeping PWS from AFMSA/SG8F and implement a base-level service contract IAW AFI 41-209, Chapter 4. (T-3)

5.15.8. Use DMLSS-FM as source data and documentation for HAMS/Housekeeping Contracts. The cleaning requirement of each room will be captured in the Room Inventory module of the DMLSS-FM system. (T-3)

5.16. Waste Management.

5.16.1. Segregation, Handling, and Storage.

5.16.1.1. Regulated Medical Waste (RMW). MTF staff will utilize bags of appropriate size, weight, type, and color or mark bags with the universal biohazard symbol IAW state and local procedures. Use autoclavable bags when waste is to be sterilized. (T-2)

5.16.1.1.1. Fluids. MTF staff will utilize packaging appropriately marked with the biohazard symbol for quantities greater than 20cc IAW state and local MTF Infection Control procedures. (T-3)

- 5.16.1.1.2. Sharps. MTF staff will utilize serviceable sharps container appropriately marked with the biohazard symbol IAW local MTF Infection Control procedures. (T-3)
- 5.16.1.2. General Waste. MTF staff will segregate general waste from RMW IAW state and local procedures. Housekeeping will collect RMW using covered transport carts separate from general waste. (T-3)
- 5.16.1.3. Carts are stored in an access controlled and locked area prior to treatment and/or disposal IAW local procedures. Storage areas must be environmentally controlled with ventilation to maintain the integrity of packaging. (T-3)
- 5.16.1.4. Housekeeping staff must immediately report inappropriate segregation of trash to the Facility Manager for corrective action. Housekeeping staff will not handle inappropriately disposed RMW items. (T-3)
- 5.16.1.5. MTF staff will follow local MTF procedures for RMW spills. (T-3)
- 5.16.2. General Waste Collection, Disposal, and Recycling.
 - 5.16.2.1. BCE is responsible for solid waste collection and disposal service, not including RMW, according to AFI 32-1061, *Providing Utilities to U.S. Air Force Installations*, and AFI 91-203. The handling and disposal of universal waste is also addressed in 40 CFR, Part 273, *Standards for Universal Waste Management*. (T-2)
 - 5.16.2.2. FM will ensure waste collection frequency minimizes storage of waste near and/or within the MTF. (T-3)
 - 5.16.2.3. FM will ensure waste and recycling contracts meet MTF requirements for holidays and non-duty hours. Contracts may need to include provisions for continuous operation. (T-3)
 - 5.16.2.4. FM will ensure compliance with local landfill regulations and requirements. (T-3)
- 5.16.3. Regulated Medical Waste (RMW).
 - 5.16.3.1. FM develops and implements plan for RMW IAW AFI 44-108, *Infection Prevention and Control Program*. (T-3)
 - 5.16.3.2. FM will submit the RMW plan to the ICC for review and approval. The FM provides the approved RMW plan to the MLFC for incorporation into the MTF hazardous materials or hazardous waste management plan IAW TJC and US Occupational Safety and Health Administration (OSHA) regulations and standards. (T-1)
 - 5.16.3.3. Regulated Medical Waste (RMW) is defined by OSHA as “liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials.” RMW is managed IAW federal, state, and local regulations. (T-0, OSHA)

5.16.3.4. FM will:

5.16.3.4.1. Maintain copies of applicable federal, state, and local regulations (including Status of Forces Agreements (SOFA) and Final Governing Standards for OCONUS locations). (T-2)

5.16.3.4.2. Budget, oversee, and provide surveillance services for contracts necessary to dispose of RMW off-site. Develop a Statement of Work (SOW) using the AFMSA/SG8F template for contract transportation of RMW to an EPA-approved destruction/disposal facility. (T-3)

5.16.3.4.3. Obtain generator permit, as required, through BCE (Base Environmental Services and Base Environmental Coordinator). (T-2)

5.16.3.4.4. Maintain copies of manifests that track disposal of RMW for the time specified IAW state and local regulations. (T-0, TJC EC.02.02.01 and AAAHC Chapter 8)

5.16.3.4.5. Meet regularly with housekeeping to ensure they understand the requirements of the waste management plan. (T-3)

5.16.3.4.6. Develop and coordinate contingency plans with the BCE concerning disposal of RMW during emergencies. The plans must include alternative arrangements for the disposal of RMW in case of equipment (incinerator, autoclave, shredder, grinder, etc.) or contract failure. (T-1)

5.16.4. On-Site Disposal of RMW.

5.16.4.1. If disposal of waste is handled on-site, the FM will oversee the operation of the disposal device. The facility treats or disposes of RMW IAW federal, state, and local laws and regulations. The MTF may treat medical waste on-site using sterilization, grinding, shredding, or other approved methods. (T-3)

5.16.4.2. Sterilization. RMW may be sterilized and transported to a landfill IAW local regulations. OCONUS locations will operate IAW applicable Final Governing Standards for permissible direct disposal methods. (T-0)

5.16.4.3. Grinding or Shredding. MTFs grind or shred waste render solid RMW into unrecognizable pulp. MTFs obtain approval through BCE for local environmental regulation compliance before operating the grinder or shredder. (T-3)

5.16.4.4. Regulated Medical Waste treated on-site prior to transport off-site for disposal will be prepared and handled IAW all pre-transport requirements and local regulations regarding segregation, packaging, and labeling of treated RMW. (T-3)

5.16.4.5. MTFs will keep a destruction or treatment operating log for each destruction or treatment device. The logs will include: the date of each treatment or destruction cycle, the length of the treatment or destruction cycle, the total weight of waste destroyed per destruction cycle, and an estimate of the weight of RMW destroyed per destruction cycle. (T-1)

5.16.4.6. MTFs will submit copies of destruction/treatment logs to the state or federal agencies requiring such documentation. Maintain copies of the destruction/treatment logs IAW AFRDS Table 41-04, Rule 33.00. (T-0)

5.16.5. Off-Site Disposal of Regulated Medical Waste.

5.16.5.1. Regulated Medical Waste not treated and disposed of on-site must be packaged for transportation to an off-site disposal facility IAW all federal, state, and local laws and regulations. (T-2)

5.16.5.2. Mark each individual container of untreated RMW, including sharps and fluid containers, being transported off-site with MTF (generator's) name, generator's state permit number or address, transporter's name, and transporter's state permit or address. (T-3)

5.17. Energy Conservation Planning.

5.17.1. The AFMSA/SG8F Facilities Operations and Engineering Branch Chief is the AFMS Energy Manager and is responsible for energy issues specific to AFMS at the enterprise and MTF levels. The BCE Base Energy Manager is responsible for all energy issues on base. Any matters concerning energy consumption, reduction, or any projected or actual energy audits at the MTF must be coordinated with the Base Energy Manager and the AFMS Energy Manager. (T-3)

5.17.2. The FM is responsible for development and maintenance of the energy conservation plan in coordination with MTF executive committee IAW the Tricare Management Activity (TMA) *Energy and Water Efficient Operations and Maintenance Guidelines: Military Health System* and ACPD 90-17, *Energy Management*. The plan will be updated annually and coordinated with the base energy manager. (T-0)

5.17.3. Most conservation measures can be classified into six basic categories: awareness, maintenance, retrofit, replacement, new construction, and load shifting.

5.17.3.1. Awareness measures are low-cost or no-cost measures that result from user education.

5.17.3.2. Maintenance measures are low-cost ways to ensure peak performance from existing systems and continued high performance from new systems.

5.17.3.3. Retrofit provides technological improvements to existing buildings and equipment.

5.17.3.4. Replacement is the installation of high-efficiency equipment when existing equipment wears out. In addition, inefficient equipment should be replaced before its scheduled replacement time if economical.

5.17.3.5. New construction offers an unparalleled opportunity to install the most cost-effective heating, ventilation and air conditioning (HVAC) system, lighting, and energy control equipment along with appropriate insulation, high-efficiency windows, and energy-saving design considerations.

5.17.3.6. Load shifting of electrical loads away from peak demand periods saves money when the local utility imposes "demand charges" based not just on kilowatt-hours (kWh) of energy used, but also on the highest kilowatt (kW) demand, or rate of use, over a certain period.

5.17.4. Energy conservation project funding sources may include government, public utilities, or private sector through Energy Savings Performance Contracts (ESPC). The AFMS Energy Manager and Base Energy Manager may offer potential funding sources.

5.17.4.1. Government. Funding through operations and maintenance (O&M) and MILCON from the Energy Conservation Investment Program (ECIP).

5.17.4.2. Public Utilities. Funding provided through Demand Side Management programs.

5.17.4.3. ESPC. Private contractor evaluates, designs, finances, acquires, installs, and maintains energy saving equipment and/or systems for a client and receives compensation based on the energy consumption/cost savings performance of those equipment items/systems. Facility Managers must consult AFMSA/SG8F Facilities Operations and Engineering Branch for approval to enter into ESPC contracts. (T-3)

5.18. Linen Supply.

5.18.1. Medical linen supply may be supported by laundry service provided by contract, inter-service support agreement (ISSA), memorandum of agreement (MOA), or a combination of these. Procedures for control and exchange of linen within the using activities and the use of contract services are in AFI 34-246, Chapter 6, *Air Force Lodging Program*.

5.18.2. Linen storage and distribution services should be included in contracts or local base contracting managed housekeeping contracts IAW AFI 44-108. For MTFs using HAMS, the PWS for HAMS services, Section 5, provides guidance to include the hospital linen supply function as a part of the housekeeping activity. The HAMS PWS and execution assistance can be obtained from AFMSA/SG8F. (T-3)

5.18.3. The MLFC will appoint an NCO or a GS-04/WG-04 or higher civilian as the Linen Supply Officer. (T-3)

5.18.4. The Linen Supply Officer (LSO) will:

5.18.4.1. Oversee MTF laundry and/or linen services, serve as the contract Functional Requirements Evaluator Designee (FRED), and ensure all PWSs, ISSAs, and MOAs clearly state the evaluation criteria (cleanliness, shrinkage, turnaround time, etc.) on which contractor performance will be based. (T-3)

5.18.4.2. Maintain linen records. (T-2)

5.18.4.3. Advise the MTF Infection Control Committee on issues relating to linen management. (T-3)

5.18.4.4. Ensure linens are handled and transported IAW AFI 44-108, paragraph 3.11.3.

5.18.5. Linen Supply Records. Use AF Form 581, *Medical Linen Supply Record* (or a similar computerized linen record keeping system developed at the MTF level), to record all items under the control of linen supply. (T-3)

5.18.6. Laundering Organizational Clothing. Organizational clothing may be laundered under the MTF contract/ISSA/MOA.

THOMAS W. TRAVIS, Lieutenant General,
USAF, MC, CFS
Surgeon General

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

21 CFR, *Food and Drugs*

29 CFR, Part 1910, *Occupational Safety and Health Standards*

40 CFR, Part 273, *Standards for Universal Waste Management*

42 CFR, *Public Health*

NFPA 10, *Standard for Portable Fire Extinguishers*

NFPA 13, *Standard for the Installation of Sprinkler Systems*, 2013

NFPA 25, *Standard for Inspection, Testing, and Maintenance of Water Based Fire Protection Systems*

NFPA 70, *National Electrical Code*, 2014

NFPA 99, *Health Care Facilities Code*, 2012

NFPA 101, *Life Safety Code*, 2012

NFPA 110, *Standard for Emergency and Standby Power Systems*, 2013

DoD 6025.18- R, *DoD Health Information Privacy Regulation*, 24 January 2003

DoD 8580.02- R, *DoD Health Information Security Regulation*, 12 July 2007

UFC 3-501-01, *Electrical Engineering for Arc Flash*

UFC 3-560-01, *Electrical Safety, O&M*

UFC 3-601-02, *Operations and Maintenance: Inspection, Testing and Maintenance of Fire Protection Systems*

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AFPD 41-2, *Medical Support*, 28 June 2013

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AFI 10-211, *Civil Engineer Contingency Response Planning*, 16 November 2011

AFI 10-403, *Deployment Planning and Execution*, 20 September 2012

AFI 25-101, *War Reserve Materiel (WRM) Program Guidance and Procedures*, 02 May 2005

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AFI 32-1001, *Operations Management*, 01 September 2005

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- AFI 44-108, *Infection Prevention and Control Program*, 01 March 2012
- AFI 44-119, *Medical Quality Operations*, 16 August 2011
- AFI 48-148, *Ionizing Radiation Protection*, 21 September 2011
- AFI 91-202, *The US Air Force Mishap Prevention Program*, 05 August 2011
- AFI 91-203, *Air Force Consolidated Occupational Safety Instruction*, 15 June 2012
- AFI 91-204, *Safety Investigations and Reports*, 12 February 2014
- AFMAN 24-204 (IP), *Preparing Hazardous Materials for Military Air Shipments*, 03 December 2012
- AFMAN 33-282, *Computer Security (COMPUSEC)*, 27 March 2012
- AFMAN 33-363, *Management of Records*, 01 March 2008
- AFMAN 41-216, *Defense Medical Logistics Standard Support (DMLSS) Users Manual*, 13 February 2013
- T.O. 00-20-14, *Air Force Metrology and Calibration Program*, current edition
- T.O. 33K-1-100-1, *Technical Manual Calibration Procedure for Maintenance Data Collection Codes and Calibration Measurement Summaries*, current edition
- T.O. 33K-1-100-2, *Equipment Calibration Requirements List*, current edition
- Prescribed Forms***
- AF Form 509, *Medical Equipment Maintenance Record*
- AF Form 1763, *Medical Maintenance Manual Work Order*
- AF Form 4033, *PMI/AE Certification Label*
- Adopted Forms***
- DD Form 2163, *Medical Equipment Verification Certification*
- DD Form 1348-6, *DoD Single Line Item Requisition System Document (Manual Long Form)*

AF Form 55, *Employee Safety and Health Record*

AF Form 502, *Ground Monitor Test Record*

AF Form 847, *Recommendation for Change of Publication*

AF Form 1487, *Fire Prevention Visit Report*

AF Form 4368, *Scheduled Maintenance and Certification Sticker*

Form FDA 3500A, *Voluntary MedWatch Report*

Abbreviations and Acronyms

AAAHHC—Accreditation Association for Ambulatory Health Care, Inc.

AE—Aeromedical Evacuation

AFI—Air Force Instruction

AFJI—Air Force Joint Instruction

AFMAN—Air Force Manual

AFMETCAL—Air Force Metrology and Calibration

AFML—Air Force Medical Logistics

AFMOA—Air Force Medical Operations Agency

AFMOA/SGALE—AFMOA, Medical Logistics Division, Clinical Engineering Branch

AFMS—Air Force Medical Service

AFMSA—Air Force Medical Support Agency

AFMSA/SG8F—AFMSA, Health Facilities Division

AFOSH—Air Force Occupational Safety and Health

AFPD—Air Force Policy Directive

AFRC—Air Force Reserve Command

AFSC—Air Force Specialty Code

AFTO—Air Force Technical Order

AMC—Air Mobility Command

ANG—Air National Guard

ARC—Air Reserve Component

ATP—Acceptance Test Procedure

AWG—American Wire Gauge

BCE—Base Civil Engineer or Engineering

BEE—Bioenvironmental Engineer

BMET—Biomedical Equipment Technician

CDRH—Center for Devices and Radiological Health
CFM—Career Field Manager
CFR—Code of Federal Regulations
CONUS—Continental United States
COR—Contracting Officer Representative
DHP—Defense Health Program
DMLSS—Defense Medical Logistics Standard Support
DoD—Department of Defense
DRMO—Defense Reutilization and Marketing Office
ECIP—Energy Conservation Investment Program
ECN—Equipment Control Number
ECRI—Emergency Care Research Institute
EDF—Equipment Data File
EEIC—Element Of Expense/Investment Code
EOC—Environment of Care®
EOCC—Environment of Care® Committee
EPA—Environmental Protection Agency
ERAA—Equipment Review and Authorization Activity
ESPC—Energy Savings Performance Contract
FDA—Food and Drug Administration
FDAMA—Food and Drug Administration Modernization Act
FEF—Facilities and Environment Function
FM—Facility Management
FM—Facility Manager
FRED—Functional Requirements Evaluator Designee
GFCIs—Ground Fault Circuit Interrupters
HAMS—Hospital Aseptic Management System
HFD—Health Facility Division
HIPAA—Health Insurance Portability and Accountability Act
HMR—Historical Maintenance Record
HVAC—Heating, Ventilation, and Air Conditioning
IAW—In Accordance With

ICC—Infection Control Committee
IMFE—Individual Medical Facility Exhibit
TJC—The Joint Commission
LIM—Line Isolation Monitors
MAJCOM—Major Command
MAV—Management Assist Visit
MC—Minor Construction
MC- CBRN—Medical Counter Chemical, Biological, Radiological, and Nuclear
MCRP—Medical Contingency Response Plan
MEMO—Medical Equipment Management Office
MEPRS—Medical Expense and Performance Reporting System
MERC—Medical Equipment Repair Center
MFM—MAJCOM Functional Manager
MFUB—Medical Facility Utilization Board
MILCON—Military Construction
MLFC—Medical Logistics Flight Commander
MMQC—Medical Materiel Quality Control
MMR—Maintenance Management Report
MOU—Memorandum of Understanding
MRA—Maximum Repair Allowance
MTF—Military Treatment Facility
NCOIC—Non Commissioned Officer In Charge
NIST—National Institute of Standards and Technology
NFPA—National Fire Protection Association
O&M—Operations and Maintenance
OEM—Original Equipment Manufacturer
OIC—Officer In Charge
OPR—Office of Primary Responsibility
OSHA—Occupational Safety and Health Administration
PADs—Public Access Defibrillators
PCRI—Post Calibration Radiation Inspection
PHI—Protected Health Information

PM—Preventive Maintenance
PMEL—Precision Measurement Equipment Laboratory
PMI—Patient Movement Items
PWS—Performance Work Statement
QA—Quality Assurance
QA/RM—Quality Assurance/Risk Management
RMO—Resource Management Officer
RPIE—Real Property Installed Equipment
RWP—Recurring Work Program (Plan)
SMA—Service Maintenance Agreement
SMDA—Safe Medical Device Act
SOC—Statement of Conditions
SOW—Statement of Work
SRM—Sustainment, Restoration, and Modernization
TMDE—Test, Measurement and Diagnostic Equipment
TO—Technical Order
USC—United States Code
UEI—Unit Effectiveness Inspection
WIMS—Work Information Management System
WRM—War Reserve Materiel